

# A STUDENT'S HISTORY OF EDUCATION

Our Education Today in the Light  
of Its Development

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## PREFACE

This volume is intended as a revision of my *A Student's History of Education*, although it has been largely re-written and considerably expanded. Many changes have taken place during the score of years since that textbook was first published. In the course of time, much new material is bound to be discovered, and one's point of view is likely to shift. As a natural result, this presentation of a past generation has had to be re-proportioned and brought into line with more recent experience and investigation.

Nevertheless, my approach to the subject in general remains the same. As before, I have sought to stress educational institutions and practices, rather than theories that did not find actual embodiment in the times. Likewise the development of education during the past three centuries, especially in America, has been detailed at the expense of much that might prove attractive and interesting to the general reader, but far less stimulating and fruitful for those intending to become teachers in the United States about the middle of the twentieth century.

I have found it as difficult as ever to curtail the attractive period of Hellenic activity and the fascinating stories of monasticism and chivalry, and the necessary condensation in the case of Plato and Aristotle, Abelard and Aquinas, Montaigne and Mulcaster, still seems like an affront to old friends. I have, however, undertaken the part of the Spartan father, and have compressed the account of all educational endeavor before the last three centuries within the space of two-fifths of the book. I

have, on the other hand, correspondingly expanded the material on the development of education in America. The account of each educational movement since the fifteenth century has included at least an attempt to trace its influence upon the content, method, and organization of education in the United States, while five chapters, constituting about one-third of the whole material, have been devoted exclusively to the evolution of educational systems and practices in this country. This elaboration of my former point of view is reflected in the sub-title now given to the book.

The idea of an outline at the beginning of each chapter, which was embodied in the original edition of *A Student's History of Education*, has in this revision been transformed into a summary at the close of every division. This is probably a more logical placement, but the various digests may still be used as a hypothetical or tentative generalization of the facts to be held in mind by the student as he reads the chapter. He will thus be enabled to see that the general statements are verified and made more significant by the details, and at the same time to organize the facts with reference to the generalization and thereby secure an easier control of them. After this study of details has established the truth of the summarization and enriched its meaning, he can review it and fix it in mind as being the conclusion of the chapter.

In preparing this new presentation, I have received valuable aid from many quarters. Such major works on the general History of Education as the publications of Cubberley, Eby and Arrowood, Monroe, and Reisner, listed on pages 8-9, and those on the History of Education in America written by Cubberley and by Knight and given on page 211, have proved most suggestive and stimulating



My entire manuscript has been reviewed and criticized by Harry G. Good of the Ohio State University, E. I. F. Williams of Heidelberg College (Ohio), and Thomas Woody of the University of Pennsylvania.

I have also received special aid in the case of particular chapters. The material on Jewish education has been greatly improved through the suggestions of President Cyrus Adler of Dropsie College, Philadelphia, and Professor I. L. Kandel of Teachers College, Columbia University, while that relating to the institutions of the Jesuits and of the Christian Brothers has been somewhat relieved of inaccuracies through the assistance given me on the original work by the Reverend Benedict Guldner, S. J., of St. Joseph's College, and by Brother Denis Edward, F. S. C., President of La Salle College, Philadelphia. Dr. I. L. Kandel's *Comparative Education* has been of great service in the revision of my chapter on Foreign Systems of Education and in the construction of new charts to illustrate the organization of these systems. Doctor Kandel has also given me the benefit of his wide reading and accurate scholarship, and brought me even later information concerning European schools than that contained in his admirable book on the subject, published but a few years ago. Likewise Dr. James F. Abel, specialist in the United States Office of Education, has read and revised my descriptions of foreign education and has twice corrected my diagrams of the German, French, and English systems. My bibliography has been expanded and improved by a number of specialists, particularly that of Chapter I, which has benefited by the kind offices of Professors Franklin W. Edgerton of Yale University, Charles A. Ellwood of Duke University, and Robert E. Hume of Union Theological Seminary.

Finally, I have received most valuable help in carrying this book through press from my colleagues in the State Education Department, Assistant Commissioners Hermann Cooper, Harlan H. Horner, and J. Cayce Morrison, from the Department Supervisor in English, Mr. George W. Norvell, and the Department Editor, Mr. Charles F. Probes, from members of the State Library staff, Misses Mary B. Brewster, Martha L. Phelps, and Agnes G. Favreau; from my secretaries, Misses Louise Gibb, Marie E. Prince, Mary G. Burke, and Janet A. Campbell; and from my wife, Helen Wadsworth Graves. The charts on European school organization were drawn by the skillful pen of Mr. Roger H. Stonehouse, chief engraver of the Department.

F. P. G.

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# A STUDENT'S HISTORY OF EDUCATION

## INTRODUCTION

### THE STUDY OF THE HISTORY OF EDUCATION

**Object in studying educational history.** — Why study the History of Education? Obviously for the same reason that we study the history of any social movement, function, or institution, in order that we may understand the present through its setting in the past and so learn how to control it. If we fail to acquaint ourselves with the historical development of education, we are likely to be lost in the labyrinth of present educational activities.

A person ignorant of what has occurred in the past stands a fair chance of adopting one of two attitudes, which lead in opposite directions but are equally fraught with disaster. In his desire to miss no opportunity to progress, he may seize upon each new watchword, institution, or movement, and hold it as the very highroad to success, without endeavoring to discover how direct it is or whether it has ever been tried out before. Or, with the conviction that all progress is a delusion and a snare, he may utterly refuse to depart from the safe pathway of tradition. Both types of practice characterize the man who has never studied the past and thus obtained a basis for evaluating the present. As a matter of fact, the same individual may be alternately guilty of both these

blunders, proceeding blindly first in one direction and then in the other

Changes in social and educational conditions are and have always been inevitable. Any examination of history will show them constantly taking place in one way or another, despite most determined efforts to prevent such an occurrence. These changes cannot be stayed, but we may through the experience of the past be able to guide them. The study of history will enable us to examine close at hand what has previously taken place at various periods and permit us to distinguish the several factors in educational development — social, economic, political, religious — and hence come to understand their interrelation and effects. It will discriminate for us the traditions, customs, and systems that have existed in the past and afford us some knowledge of what attitudes and procedures have led to success or failure. If we but acquaint ourselves with these lessons of history, we are not likely to follow only the beaten paths, nor yet to rush wildly after each will-o'-the-wisp

It is particularly important in a democratic society like ours to recognize that changes are bound to occur and to seek to direct and control them in the interest of the common good. In an autocracy or oligarchy this tendency of society toward constant change is never readily admitted. It is regarded with both hatred and fear. Existing conditions are willfully or ignorantly guarded as something sacred, and an effort to preserve the present situation is made through an appeal to some *tabu*, the divine right of kings, a class organization of society, or other traditions. Those who hold radical views of the social order, on the other hand, insist upon change at any cost, and, ignoring all that has occurred, seek to act with no evidence from the



past as to what will prove effective and most promote the general welfare. It is essential, therefore, if we are to be true to our American ideals, that we study educational history and learn from its records what means may wisely be chosen to reshape the continually changing conditions so as to meet the ends of democracy.

**History of Education in teacher preparation.** — In the past the History of Education has played an important part in the preparation of teachers. Through a knowledge of educational experience, especially the thought of great leaders, which is furnished by this study, it was hoped that some means of solving the important educational problems of the present might be discovered. Hence the various civilizations and periods of the past and the educational classics of the ages were scanned in detail, and consistent efforts made to transfer their teachings directly to the present. But as new difficulties and problems kept arising in current practice and the educational institutions and processes of modern times were found to be so complex and intricate, the study of educational history was soon felt to be inadequate to meet the situation and came to be discredited as a means of training teachers. It was generally replaced by more scientific methods of approach and by endeavors to solve the complicated educational problems of today through an immediate and direct study of the facts, rather than through any reproduction of procedures suggested by past experience.

The History of Education, however, is far from being such a fruitless study as this tendency would seem to indicate. That view of it arose from our old attitude toward it and the way in which it was presented. We can scarcely hope to glean from the relatively simple society of the past or the idealistic teachings of educational

reformers any solution that can be directly applied to the numerous problems arising from the complicated organization and procedures of the present day, but we can, by examining and analyzing the civilization and educational thought of various periods, discover what was sought to be accomplished and what factors led to success. Practical solutions in education must constantly change as a study of the individual reveals his physical, intellectual, and social nature more completely and accurately, and as civilization continually readjusts its procedure to the march of progress, but educational problems and purposes persist from age to age and are controlled by the same underlying principles.

No subject will be found more valuable as a key to understanding the present than the History of Education, if we but interpret it as a means of connecting movements in education with the purposes for which they are established. The features in the educational procedure of any country or period came into existence as a means of solving the problems that arose in seeking the outcomes thought desirable by the people concerned. Every change was made to overcome some difficulty in attaining an object which at the time was felt to be important and was consciously pursued by those who realized the need of changing. Hence the real function of the History of Education should be to relate social practices to the purposes they serve and thus to reveal what constitutes a successful solution and enable us to improve our present procedure. As Coursault has said :

The Hebrew ideal of the national worship of Jehovah ; the emphasis of Athenian philosophers upon contemplation as the highest good, the Roman love of power in the practical world, the other-worldly spirit of monasteries, the gallant dreams of chivalry ; worths sought

in the Italian Renaissance, Protestant Reformation, and French Revolution, the ideals of statesmen, scientists, and industrial leaders, have all given the authority of their values in a greater or less degree to phases of present educational practice. The historical method is the only method whereby this intricate network of means and ends can be unraveled.<sup>1</sup>

Through such an approach the embryonic teacher will be impelled to analyze his problems more completely and to obtain much light upon the school practices with which he himself is concerned. By presenting a series of clear-cut views of past conditions, often in marked contrast with his own, it will make him aware of how far the present educational situation has been traditionally received, and will at the same time help him to understand the origin and significance of current practices. In this way a study of the History of Education will disrupt his complacent acceptance of the present, and will enable him to reconstruct his ideas in the light of the peculiar conditions out of which the education of his times has sprung.

**How to study the History of Education.** — Clearly the first step, then, in studying the educational history of a people or period lies along the way of inquiring the purpose of the education under consideration, since purpose may unify manifold acts by giving meaning to them. When these aims have been traced, the next move will naturally be in the direction of finding out what attempt was made to realize them. This study of the means of accomplishing an educational purpose may include an investigation of possibly three main topics, which are closely connected. These may be termed respectively the content, method, and organization of that education.

<sup>1</sup> From *Principles of Education*, p. 206, by permission of Silver, Burdett, and Company

In the first place, the student should determine through what accomplishments or knowledge the education in question attempts to reproduce in the younger generation the best of racial experiences. Such educational content may consist of a few simple forms of expression, or, if an educational system has been fully developed, of the actual course of study. Then some attention should be given to the method by which the instruction was imparted, although in some instances this may be so informal or so obscure that one would not at first perceive that any definite procedure was being followed. This may involve some study of the spirit, ideals, and preparation of the teachers, and their modes of punishment or reward. Finally, it is of importance to understand the organization and material equipment by which the particular type of education was carried out, even if in it the youth learns through mere imitative play or active participation in the community. When conditions become more complicated, regular schools are instituted, and a study of organization may then include some understanding not only of the educational system, with its management and hours of attendance, but also of the buildings or places for holding the schools.

When the educational system is fairly understood in both its purpose and procedure, the final inquiry will naturally be as to its results. Only as its success or failure and its effect upon civilization and the people or period that employed it are known, can its value as a guide or a warning at the present day be rightly known. But beyond learning and interpreting the facts connected with the educational purpose of a country, period, or individual, finding the way in which an attempt was made to approach this goal, and making some estimate of the results, the

student of the History of Education has no direct concern.

**Presentation of material in this book.** — All historical material, however interesting and valuable in other connections, which does not in some way contribute to these ends may safely be neglected in this study, as it would seem to throw little or no light upon educational problems of the present or future. Hence it will be justifiable in a brief treatise like this one to omit or pass over hastily much that might be of significance in a more complete description of civilization. Therefore, the amount of space and the perspective afforded to various peoples, epochs, leaders, and systems must here be determined in large measure by the light their history sheds upon the aim, matter, method, and means of education today, and by the part they have played in the evolution of educational institutions and practices

With such a policy of limited scope, it has at times appeared wise to select the history of a single epoch, state, or educational leader as a type, to the exclusion of others of apparently equal importance, and to treat it with considerable intensiveness, instead of presenting all sides of the subject with encyclopedic monotony. It would likewise seem as if our present problems in the United States could best be understood through an analysis of the practices that have developed in modern times, particularly during the epochs of American history. Hence while the chapters to follow will include an account of all educational endeavor from the day of primitive man to the present, a large proportion of the material will be concerned with educational activities in the last three centuries and with the rise and development of educational systems in this country.

## SUMMARY

The History of Education should be studied, that one may understand the present through its setting in the past and learn to control it. We cannot directly apply the solutions of the past, but we can discover what was sought to be accomplished and what principles led to success by studying the purpose, content, method, organization, and results of each period or system of education. The material presented in this book has thus been limited in scope, and at times the description of a single epoch, state, or leader has been selected and elaborated as typical of many.

## SELECTED READINGS

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## CHAPTER I

### THE EARLIEST EDUCATION

There is little of importance in the History of Education before the times of the Jews, who made such a large contribution to our conceptions of morality and religion, of the Greeks, to whom we are deeply indebted for intellectual and esthetic development, and of the Romans, from whom we derived so many of our ideas of organization and social order. Nevertheless, we cannot altogether overlook the primitive tribes; much less, the nations of the ancient Orient, both of which antedated Judaea and the Classic civilization of the Mediterranean. While we cannot here elaborate their educational procedures, all these early peoples possessed an education of their own and at least prepared the way for understanding later developments.

#### PRIMITIVE EDUCATION

In primitive tribal life the training of the young is simple and direct. It is intended primarily for the satisfaction of immediate wants — food, clothing, and shelter — but this practical education has always been accompanied by a crude theoretical training in learning how to deal with the unseen. The young savage has to be acquainted by the medicine man with the religious forms and ceremonies of his people, and with his obligations and duties as a regular member of the clan.

**Imitative play and initiatory ceremonies as the means of education.** — Since the racial experience at which



this primitive education aims is so simple, the boy or girl can acquire it largely in imitative play or by participation in the activities of the community. No actual schools are needed, but, through following the example set by their elders, a certain skill in fighting, hunting,



FIG 1 Elders instructing young men of an Australian tribe at the "initiation ceremonies"

Reproduced from Spencer and Gillen's *Across Australia*

and fishing can be acquired by the boys, and in tanning, weaving, and cooking by the girls. The method used is that of "trial and success" The learner blindly imitates until the wrong acts are eliminated and the right ones rendered habitual through the pleasure resulting from successful action.

But the theoretical education is more conscious and formal, and is given at puberty through the "initiation ceremonies" (Fig. 1). In these rites the youths are

definitely instructed by their elders, especially the medicine men, concerning proper conduct toward the spirits of their ancestors and the "totem" animals, and toward their elders, the opposite sex, and the clan in general. Strict silence is enjoined upon the initiates concerning the information that is communicated, and, to impress it upon their minds, they are required to fast for several days and are usually mutilated in some way. A corresponding initiation is given to the girls of the clan under the direction of the older women.

**Results of primitive education.** — Thus in all things the savage lives merely from hand to mouth. His social organization is undeveloped, his occupations are largely limited to securing the products of nature that are at hand, his religion is crude and superstitious, and the education he receives is imitative and fixed. Looking upon his physical and social surroundings as unchanging, he seeks no control over nature but secures all his training through imitation of his elders. Since he can make no clear distinction between himself and the clan or tribe to which he belongs, there is practically no development of individuality possible. The savage has not developed sufficiently to analyze the conditions about him and to pass general judgment upon them, or to treasure his results in written records. He has, in consequence, but little idea of the past or the future and is virtually tied to the present.

### ORIENTAL EDUCATION

**A training for occupations.** — The nations of the ancient Orient — Egypt, Babylonia, Assyria, China, India, Persia — may be said to represent the next stage in civilization. These peoples have been subject to very different geographical, social, and religious influences in their

history and each can be recognized from a number of diversities, but their characteristics are sufficiently alike to justify treating them in a single group. Certain common tendencies appear throughout their education and their civilization in general. The chief educational aim of these nations was to fit for specific occupations. While they seem to have arrived at a division of labor, unknown to the primitive tribes, their systems of education were largely vocational and they seldom undertook any training for manhood or citizenship. In this way arose definite class distinctions, and young people were educated according to the position in society they were expected to fill, which seems in general to have been that occupied by their parents.

The one apparent exception to this training for occupations is to be found in China. While education in this country was of a literary and *memoriter* nature, and limited to a knowledge of the teachings and imitation of the style in the *Five Classics* and the *Four Books*, handed down from the times of Confucius and his disciples, a successful completion of it led to the most important offices in the empire. The results of this type of education were tested through a system of formal examinations conducted in cells, and the possibility of passing them successfully and so rising to positions of great distinction in the empire was open to any youths whose families could furnish them with the necessary training.

In Egypt, Babylonia, and Assyria, however, where considerable development had been acquired in engineering, architecture, medicine, and various crafts like stone-working, glass-making, and gem-carving, education was more clearly organized with reference to social caste and occupation. The sacerdotal class was considered the

highest and was trained in various professional skills, such as those of the engineer, architect, physician, embalmer, and scribe.<sup>2</sup> Next in rank came the military class, which was afforded a training in the arts of warfare. The rest of the people composed the industrial class, which was required to learn how to build the public works and to pursue various trades and crafts. In Persia, on the other hand, the military class dominated. Here the purpose was to train for warfare, and the content of education consisted mostly of horseback riding, archery, and using the sling and javelin, together with some inspiration to noble deeds through a training in practical ethics.

**Caste education of India.** — But probably the education most typical of the Oriental stage of development is that found in ancient India, which illustrates the extreme stratification of a people into fixed classes or castes. We may, therefore, be justified in considering somewhat more in detail the social environment and education of the Hindus. In India, largely as a result of the debilitating climate, there was formulated about 1200 B.C. a dreamy philosophy, according to which nothing except Brahma, the one universal spirit, really exists. While men might seem to be temporarily allowed a separate existence of their own, it was held that they should remain inactive as far as possible and seek an ultimate absorption into the great Eternal Spirit.

Although somewhat modified by the infusion of Buddhism between 500 B.C. and 500 A.D., by the entrance of Parseeism and Mohammedanism at later periods, and by the British occupation of the peninsula during the nineteenth century, this mystic and static religion is still dominant in India. Connected with it is the division of society into four hereditary groups. These are (1) the

Brahmans, or sacerdotal class, which includes all those trained for law, medicine, teaching, and other professional occupations; (2) the Kshatriyas, or military and administrative caste; (3) the Varisyas, composed of merchants, farmers, and other employers of labor; and (4) the Sudras, which comprehends the servants and all other menials. Numerous subdivisions are also made within the castes. Altogether outside the social order are the Pariahs, or outcasts. The caste system is exceedingly strict. One may fall into a lower caste, but he cannot rise ✓

**Aim, means, and method of Hindu education.** — Hence Hindu education endeavored to imbue its pupils with the tenets of their religion, and so prepare them for absorption into the Infinite, rather than for activities in this life, and to preserve the caste system and keep all within the sphere of their occupation.<sup>1</sup> The three upper castes were, therefore, supposed to gain a knowledge of certain sacred works, especially the four Vedas or books of "knowledge," the six Angas on philosophical and scientific subjects, and the Code of Manu, which is a collection of traditional customs, but few, outside the Brahman caste, were ever allowed to take advantage of this opportunity. The warriors were expected to pay more attention to martial exercises, and the industrial caste to acquire through apprenticeship the arts necessary for its hereditary occupations. Sudras, Pariahs, and women were generally allowed no education.

Except the Sudras, all the castes obtained elementary education from a study of the laws, traditions, and customs

<sup>1</sup> Through the British rule a modern system of elementary and secondary schools, colleges, universities, and teacher-training institutions was gradually introduced during the nineteenth century, and most noteworthy advances have now taken place in the education of modern India

of the country through the medium of the family, and more recently through village schools held in the open air (Fig. 2). The higher education was largely carried on in Brahmanic colleges, called *parishads*, and, as also in the case of the elementary work, the teachers had to be Brahmins. Since all learning was preserved by tradition, the



FIG 2. A Hindu school in the open air, with the village schoolmaster teaching boys to write on a strip of palm leaf with an iron stylus

Reproduced from Amy Wilson Carmichael's *Things as They Are* by permission of Fleming H. Revell Company

chief methods of instruction were always those of memorizing and imitation. Even the later texts were so written as to be easily committed, and the lines were sung aloud by the pupils until they memorized them. Writing was learned by imitating the teacher's copy on the sand with a stick, then on palm leaves with a stylus (Fig. 2), and finally on plane leaves with ink.

Hence, among the Hindus education in the literary sense was withheld from ninety-five per cent of the population, and, as far as it existed, consisted in a mere stuffing of the memory. It concerned itself but little with mental

culture or with preparation for real living. The Brahmins have handed down considerable traditional learning, grammar, phonetics, rhetoric, logic, "Arabic" notation, algebra, astronomy, and medicine, but new knowledge of any sort has for the most part been barred. Some Hindus still plow with sticks of wood, and harvest their crops with devices equally primitive. They bake bricks, work metals, and weave cloth, but often with the same kind of appliances as were used by their remote ancestors. Until fairly recent years, they were lacking in ambition, self-reliance, and personal responsibility, and had not yet come to any great degree of solidarity or national unity.<sup>1</sup> To them prosperity and progress seemed largely to be foreign ideas -

**Hindu education as typical of the Orient.** — The other countries of the ancient Orient never fixed their social classes in so hard and fast a manner and never included so elaborate a philosophy among the products of their culture. But old India may well be considered broadly typical of the stage of development in the Orient. In the system of each country, the classes below the highest were given little intellectual education, and the women as a whole had none, but both were trained by apprenticeship in their vocations. Actual schools, both elementary and higher, were instituted, and the latter, except in China, were generally conducted at temples or priestly colleges by members of the sacerdotal class. The educational content was naturally traditional. It was, for the most part, ensured against change by being embalmed in sacred books. The educational method largely consisted in memorization of the text and imitation of the

<sup>1</sup> Nationalism is clearly on the increase now, and is causing considerable alarm to British rule in India

copy set, and little attempt was made to give a reason for the customs and traditional knowledge taught. Hence wherever individuality began to emerge, it was suppressed by every agency possible, and, although these peoples largely overcame the primitive enslavement to nature and the present, they were quite in bondage to the past.

### SUMMARY OF THE CHAPTER

The training of primitive man aims only at securing the necessities of life and in learning how to deal with unseen powers, and is acquired informally through the elders and the medicine man.

In the next stage of progress, Oriental education as illustrated by India, a traditional knowledge was acquired through *memoriter* and imitative methods. As primitive man was tied to the present, the Oriental peoples were tied to the past. Thus the earliest education was largely non-progressive.

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## CHAPTER II

### THE EDUCATION OF THE JEWS

While the Jews might be classed as a people of the ancient Orient, they deserve separate treatment because the level of culture at which they arrived was so lofty in type and because their ideals in education have so profoundly influenced the modern world. Beginning with the distinctively religious view instituted by Moses, they have ever regarded Jehovah (Jahweh) as the preserver and lawgiver of his people. While their religious conceptions constantly expanded, through all stages of development — the formulation of priestly tradition, the evolution of monotheism, and the formal interpretations of the scribes — they always emphasized the moral law and the spiritual relation of the Infinite Being to his people. During every period of their history they held that it was the highest duty of man to act in harmony with the Divine purpose. All law, civil and ecclesiastical, was consequently regarded as the expression of the will of Jehovah, and no distinction was ordinarily made between morality or patriotism and religion.

**Religious and moral aim in Jewish education.** — The chief aim of education, therefore, was religious. In Deuteronomy appears the command: "Thou shalt love the Lord thy God with all thine heart, and with all thy soul, and with all thy might. And these words which I command thee this day shall be in thine heart, and thou shalt teach them diligently unto thy children." The

building of religious character was looked upon as the one goal to be achieved, and but little stress was placed upon knowledge of any sort save as it achieved this end. So from the first pupils were trained preëminently in that "fear of the Lord, which is the beginning of wisdom"; and, as traditions developed, this came to include an acquaintance with ritual and ceremonial duties. In keeping with their religious aim, however, the Jews strove also to afford a practical training. "Not learning, but doing, is the chief thing," according to their oral Law known as the *Mishnah*, and their education always contemplated a preparation for the concrete duties of life in matters of trade and occupation, as well as of religion and ceremonies. There is a well-known Rabbinical statement: "He who does not teach his son a trade is as though he brought him up to be a thief."

**Informal training of the home.** — Not until after the Babylonian Exile (586-538 B.C.), however, did the Jews establish actual schools. Before that children obtained a training in the traditions and observances of their religion and in the practical duties of everyday life through their fathers and mothers. In this way they learned the laws, traditions, proverbs, and songs, and came to participate in the festivals, rites, and family and social institutions of their people. Likewise they acquired a sound training in the morals and manners growing out of their religion, which emphasized such virtues as reverence, obedience, patience, charity, thrift, prudence, and patriotism. They might also be taught physical sports, dancing, and music, and even reading and writing, by their parents. In addition, the boy was trained in the work of the farm or the shop by his father, and the girl was instructed in sewing, cooking, and other household duties by her mother.

All this training was given informally in pre-Exilic times. In fact, for even a century after the return to Judaea little appears to have been done toward the establishment of educational institutions. With the new immigration under Ezra and the arrival of Nehemiah as governor, however, the synagogue began to be a seat of instruction, as well as of worship. Elementary schools were generally established at those centers, and were taught by a new gild of teachers that had sprung up. This instructional group, which had become especially learned in the code of Law (*Torah*), was known as the "scribes" (*Sopherim*).

**Schools in the synagogue.**—The synagogue schools soon became a characteristic feature of Judæan culture. For the sake of holding the favor of Jehovah and thus keeping the nation from destruction, elementary education eventually came to be made universal and compulsory. By order of the high priest, Joshua ben Gamala, in 64 A.D., one or more schools had to be set up in each synagogue or in some room attached thereto in every town and province of Judaea, and it may even be that among the educational reforms of Simon ben Shetach, president of the Sanhedrin, universal education was required in Jerusalem more than a century and a half before this. Certainly after the fall of Jerusalem in 70 A.D., wherever the Jews wandered, these synagogue schools were established and became of the utmost importance as a means of preserving the Jewish faith.

The material used in all elementary instruction was essentially religious. As in earlier days, the children started their religious and moral training in the home. Hence when they entered school at about six years of age, they had already learned many passages of Scripture,

prayers, and hymns, and had obtained an acquaintance with the various feasts and festivals and been taught the origin and significance of the acts in each observance.



FIG 3 A Jewish elementary school

Reproduced from *The Jewish Encyclopedia* by permission of Funk & Wagnalls Company

Then in the elementary school a knowledge of the Law and a sense of responsibility for carrying it out were inculcated. The pupils were required to memorize portions of the Bible, especially the *Pentateuch*, and from its content they were taught reading, writing, elementary arithmetic, and some history, geography, and general knowledge, as well as morals and religion.

The method of learning in these elementary schools of the Jews was not unlike the repetition used by other Oriental peoples. The pupils generally sat on the ground around the teacher and repeated their tasks aloud (see Fig. 3). But a practical appeal was made to various types

of memory — the visual by reading, the motor by pronouncing and writing, the auditory by hearing, and the musical by singing, the portions to be committed. Likewise various mnemonic helps, such as catchwords, symbols, and numerical groupings, were used to impress the memory. Writing was taught by following the copy on a wax tablet with a stylus, and, when the pupil was more advanced, on papyrus or parchment with a pen. From the very formal nature of this subject-matter and methods, the discipline of the Jewish schools must have been rigorous. Corporal punishment is constantly advised in *Proverbs*, although wise reproof is recognized as better on some occasions. In later times discipline became much milder, but chastisement to some extent remained in vogue. Rewards such as sweetmeats and dainties were often used as a stimulus, in place of the rod or thong.

This education of the schools, however, was not open to the girls until much later times. Their training was distinctly domestic, and was carried on mostly within the home and through worship in the temple and synagogue, and in festivals outside. While the details may have varied from generation to generation, woman's education in general consisted largely of religious and moral elements and of domestic duties and industrial occupations. The girls were trained in the observances of their religion and the virtues of piety, industry, and thrift, and were taught to cook, spin, weave, dye, and care for the flocks, harvests, and vineyards. Sometimes they were taught music and dancing. But even the elementary school of the synagogue was not for them.

Academies of the scribes. — A youth, on the other hand, might further attend an academy (*Beth-hamdrash*). These institutions had arisen as the traditional laws and

literature of the nation had expanded, and an extended training in legal and ritual matters, theoretical and hypothetical questions, and everything that would throw light upon the topics involved, was developed for those who wished to continue their education beyond adolescence. Such academies had grown up as free associations of scholars around some central figure. A scribe announced that he was willing to teach, and young men flocked around him to obtain a training and ordination as rabbis. These academies spread rapidly and flourished at all times and everywhere. During the Exile in Babylonia some of the most famous of these institutions appeared, and important schools of learning sprang up in various communities, such as North Africa, Egypt, and Spain, after the Jews had been dispersed from Palestine. The instruction was always free. The work was regarded as a religious duty and charging a fee was held to be sacrilegious. Teachers who did not possess private means supported themselves through some trade or craft. Generally both teachers and pupils took part in the discussion. The disciples were free not only to ask questions, but to express their views and opinions, though with due deference toward their masters (see Fig. 4). The discussion was usually summed up by the president of the academy.

There was scarcely any limit to the range of discussion, and almost every field of knowledge of the times was included, but the religious study of the Law was the center from which all subjects radiated. Nature was observed in order to lead man to admire the greatness of God and to recognize his own insignificance. Mathematical and astronomical knowledge were of importance in making the calculations necessary to determine the Jewish

calendar. An acquaintance with the plant and animal world was sought to throw light upon the meaning of various sacred treatises, and with human and animal anatomy to understand certain precepts and allusions.



FIG 4 A Jewish academy.

A painting exhibited in the Salon at Paris; reproduced from an etching in the Jewish Theological Seminary of America

Languages were studied to explain obscure terms in the Scriptures. Some of the academies even offered a course in Hellenic philosophy, but for the most part the work was in some way connected with the Hebrew sacred writings. From these discussions developed a body of oral learning dealing with the Law, religious regulations, and exegetical material, which was gradually developed and collected in the book known as the Talmud. This work was composed of the *Mishnah* ("teaching") and later of the *Gemara* ("supplement").

Effect of Jewish education on progress.—Thus the education of the Jews became the typical religious and moral training of antiquity. Their ideas of God, man, duty, and righteousness are seen to be far nobler than any



which had preceded them among peoples of the Orient. Even the extensive ceremonial and elaboration of the Law introduced through the scribes could not altogether destroy the spirit underlying their formalism. Their literature was largely limited to an expression of the Jewish idea of God's dealings with the world, and the devotion that should go out to Him from the pious soul, but it presented the earliest basis in education for a broad interpretation of human responsibility.

By means of their lofty conception of divine and human relations, the Jews were held together through centuries of persecution. They found their religion and education a comfort and consolation in the midst of all these trials, and through their formulations they have exercised a profound influence upon civilization. No other Oriental people of their day has remained, but the Jew with his moral discipline is with us yet. Nor must we forget that it was Judaism that gave birth to the great religion which was needed as an emancipation from bondage to form and restricted vision, and which has made its resistless way to all nations. ✓

#### SUMMARY OF THE CHAPTER

The education of the Jews was primarily religious and moral. After the Babylonian captivity elementary schools sprang up at the synagogues for all classes of society. Both boys and girls were taught religious observances and practical duties at home, but only the boys attended school. The methods of teaching appealed to various types of memory or imitation, and discipline came through chastisement or reward. Academies were likewise established for youth, and afforded an advanced training in theology, philosophy, and related subjects. The methods there were also largely *memoriter*. Despite its formalism, the Jewish education handed down a lofty conception of divine and human relations.

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## CHAPTER III

### THE EDUCATION OF THE GREEKS

The Greeks were the first people whose outlook seems to have been toward the future rather than the past, and whose education made the first serious effort to promote human development in accordance with a remote ideal progressively revealed. Even with the Greeks this intellectual emancipation did not develop at once, nor ever become universal. It first appeared among the Athenians during the enlightened period known as the Age of Pericles, when their city was beautified with architecture, sculpture, and painting, and the greatest thinkers and writers of all time flourished. Well-planned systems of education, however, existed in ancient Greece several centuries before this, and, as paving the way for the plan evolved in Athens during the Periclean period, deserve some consideration here.

#### EARLY GREEK EDUCATION

**Training for war among the Spartans.**—Of these systems among the states of ancient Greece, the earliest of which we have any extended information is that of Sparta. The sole purpose in this city was to produce a race of hardy and patriotic warriors, and was, therefore, but little more advanced than that of the Persians. The Spartans dwelt in the midst of hostile peoples they had subjugated, and strength, courage, and obedience to the laws had to be developed in their youth, if they were to survive.

Accordingly, education was so organized in Sparta as to serve the state, and the rights of the individual were given little or no consideration. State control began with birth. The infant was immediately inspected by a council of elders, and if he were sickly or deformed, he was "exposed" to die in the mountains, but if he appeared physically promising, he was formally adopted by the state and left with his mother for rearing until seven. At that age the boys were placed in charge of a state officer and ate and slept in a kind of public barracks.

Here their life became one of constant drill and discipline. In addition to hard beds, scanty clothing, and little food, they were given a graded course in gymnastics. Besides ball-playing, dancing, and the *pentathlon* — running, jumping, throwing the discus, casting the javelin, and wrestling — the exercises possibly included boxing and even the brutal *pancratium*, in which any means of overcoming one's antagonist — kicking, gouging, and biting, as well as wrestling and boxing, — was permitted.<sup>1</sup>

**Little intellectual training.** — The Spartan boys, however, received only a little informal training in the way of intellectual education. They committed to memory and chanted the laws of Lycurgus and selections from Homer, and they listened to the conversation of the older men during meal-time at the common table and were themselves exercised in giving concise and sensible answers to questions asked to test their wisdom. Every adult was also required to choose as his constant companion, or "hearer," a youth to whom he might become an "inspirer."

<sup>1</sup> Practice in boxing and the *pancratium* is now seriously disputed by some scholars. Freeman declares that these exercises were forbidden to the young Spartan, because they developed "a few particular muscles at the expense of the others."

When a Spartan youth reached eighteen, he began the distinctive study of warfare. For two years he was trained in the use of arms and skirmishing, and every ten days had his endurance tested by being whipped before the altar of Artemis. Then he regularly entered the army, and for ten years guarded some border fortress and lived upon the coarsest of fare. When he became thirty, he was considered a man and forced to marry at once, but even then he could visit his wife only clandestinely and was still obliged to live in common with the boys and assist in their training.

The education of women was very like that of the men. While the girls were allowed to live at home, they were given a similar physical training in the hope that they would become the mothers of sturdy sons. Thus the Spartan education served well its purpose of creating strong warriors and devoted citizens, but it failed to make for the highest manhood. Sparta developed practically no art, literature, or philosophy, and produced little that tended to promote civilization. She has left to the world little but examples of heroism and foolhardiness alike.

Old Athenian training in the palæstra and didascaleum. — For many centuries the Athenian education was not unlike the Spartan in promoting the welfare of the state without much regard to individual interests. But even in early days Athens felt that the state was best served when the individual secured the most complete personal development. Hence the Athenian boys began to receive at seven years of age two kinds of training: (1) the pentathlon and other physical exercises in the palæstra (Fig. 5) or exercising ground, and (2) singing and playing upon the flute or lyre, and reading and writing at the didascaleum (Fig. 6) or "music" school. After

the boy had learned his letters by tracing them in the sand, he was taught to copy verses and selections from

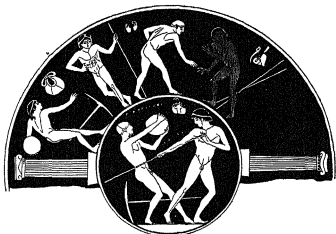


FIG 5 The palaestra



FIG 6 The didascaleum  
Education at Athens

Reproduced from illustrations taken from old vases by Freeman in his *Schools of Hellas*

well-known authors, at first upon wax tablets with a stylus, and later upon parchment with pen and ink.

It was, moreover, necessary for the pupils in singing to be taught the rhythm and melody, and to understand the poem so as to bring out its meaning. Hence the explanations and interpretations given by the teachers brought in all the learning of the times, and the moral and intellectual value of the studies must have been much greater than would be suggested by the meagerness of the course. Some moral training and discipline were also given the boy by a slave called the *paedagogus*, who conducted him to school and carried his lyre and other appurtenances. This functionary was often advanced in years or incapacitated for other duties by physical disability. —

**Gymnasia and military duties.** — At fifteen the Athenian boy might take physical training of a more advanced character at one of the exercising grounds just outside Athens, which were known as *gymnasia*. He was now permitted to go wherever he wished and become acquainted with public life through first-hand contact. When eighteen the youth took the oath of loyalty to Athens,<sup>1</sup> and for two years as an *ephebus* or cadet continued his education with a course in military duties. The first year he spent in the neighborhood of Athens and formed part of the city garrison, but in the second year he was transferred to some fortress on the frontier. At twenty the young man became a citizen, but even then his training continued through the drama, architecture, sculpture, and art that were all about him. —

<sup>1</sup> This "ephebic oath" ran as follows: "I will never disgrace these sacred arms, nor desert my companion in the ranks. I will fight for temples and public property, both alone and with many. I will transmit my fatherland, not only not less, but greater and better, than it was transmitted to me. I will obey the magistrates who may at any time be in power. I will observe both the existing laws and those which the people may unanimously hereafter make, and, if any person seek to annul the laws or set them at naught, I will do my best to prevent him and will defend them both alone and with many." (Pollux VIII, 105.)

**More advanced than in Sparta, but still old education.**— Little attention was, however, given by the Athenians to the education of woman. It was felt that her duties demanded no knowledge beyond ordinary skill in household affairs. With this exception, the Athenian education was superior to the Spartan in allowing greater opportunity for individual development and in furnishing a more rounded training. Nevertheless, until about the middle of the fifth century B.C., while differing considerably in degree from Sparta, Athens may be grouped with that country as adhering to the "old" education, where the individual was subordinated to the good of the social whole.

#### NEW GREEK EDUCATION

**Development of individualistic education at Athens.**— This characterization is, of course, in contrast to the more advanced Greek education of the "new" period, which aimed to produce an intellectual development in each individual and is represented by Athens alone. This later type of education was probably somewhat the result of the gradual rise of democratic ideals in Athens, but a more immediate set of factors grew out of the Persian wars (492-479 B.C.). The extended conflict with a powerful Oriental people, possessing a well-organized but widely different body of traditions, tended to broaden the views of the Athenians greatly. Again, the ensuing political and commercial intercourse with a variety of dependent states and nations in the Delian League, together with social contact with the foreigners from every land that were thronging the streets of Athens, led even more directly to a great intellectual development and a reconstruction of practices and beliefs.



A rapid transition in the old traditions took place and Athenian society seems for a time to have been sadly disorganized. The old was shattered, and, while new ideals were being constructed, a groping ensued. Although the latitude given the individual was destined, as always, to produce progress in the long run, and was of great ultimate service to the world, more immediately a low ebb in morals at Athens resulted. Individualism ran riot. Education reflected the conditions of the period. Its ideals became more and more individualistic. The times demanded a training that would promote the happiness of the individual, with little consideration for the welfare of the state as a whole. The old education seemed narrow and barren of content; and there arose a desire for all sorts of knowledge that might contribute to one's advancement, whether it increased his social usefulness or not. Skill in debate and public speaking was especially sought, because of the unusual opportunity for personal achievement in politics.

**Training of the sophists at the gymnasium.** — To meet these new demands, a set of teachers known as the "sophists" came into prominence. They professed to train young men for a political career, and some of them even claimed to teach any subject whatsoever or how to defend either side of an argument. These pretensions, together with their charging a fee for their services, contrary to Athenian custom, seriously offended the more conservative of the citizens of Athens. But many of the earlier sophists afforded an honest and careful training.

The effect of their teaching was especially felt by the adolescents in the *gymnasium* stage of education, since they were ambitious to distinguish themselves politically. The physical training that had hitherto dominated the

gymnasium course now gave way to a study of grammatical and rhetorical subtleties, and whenever a sophist appeared in the street, market-place, or house, the young men crowded about him to borrow from his store of experience and wisdom, and acquire his method of argument. To a less degree the same influence was felt in the lower schools and by the cadets and younger citizens. The exercises of the palaestra were no longer as rigorous, and existed for the sake of individual health and pleasure rather than for the making of citizens. The literary work of the didascaleum came to include, besides the Homeric epics, a wide range of didactic, reflective, and lyric poetry, with a superabundance of discussions. In music the old patriotic and religious songs, sung to the simple Doric airs and accompanied upon the seven-stringed lyre, were replaced by rhythms of great difficulty, like the Lydian and Phrygian, and by complicated instruments of all sorts.

All this inroad upon the time-honored curriculum shows how fully the sophists embodied the individualism of the period. Although they held no body of doctrine common to them all, they were generally at one in their position of extreme individualism. They often went so far as to insist that there could not safely be any universal criteria in knowledge or morals; that no satisfactory interpretation of life could be made for all, but that every fact and situation should be subject to the judgment of the individual. No doubt the formula attributed to Protagoras, "Man (i.e., the individual) is the measure of all things, both of the seen and the unseen," would have expressed the attitude common to most of them. They but carried to its legitimate conclusion the complete reaction from the old ideal of subordination of the individual to the state.

The reactionaries and "mediators." — Meanwhile the conservative element was making its usual attempt to adjust the unsettled conditions by suggesting a return to the old. Various schemes had been advanced by these reactionaries even before the sophists had come into prominence. Of these the most complete plan was that of Pythagoras (about 580–500 B.C.). By adopting an analogy from the "harmony" of the celestial bodies and from the relation of the powers in the individual to each other, he arranged a definite hierarchy in society, so that each member should have his proper place, and complete harmony and social order should ensue. As the influence of the sophists began to be felt, later representatives of the reactionary movement, such as that matchless caricaturist, Aristophanes (445–~~380~~ **380** B.C.), began to appear and inveigh against the new conditions.

But the social process can never move backward, and reconstruction on some higher plane was needed to overcome the destructive tendencies of the times. To furnish this was the task set themselves by a group of prominent philosophers, usually called the "mediators." Like the sophists, they recognized that the traditional beliefs and sanctions, the old social order, and the former ideals and content of education had been outlived, and that the individual could not find truth and morality through an institutional system. At the same time they felt that the extreme individualism of the sophists was too negative a basis upon which to build, and that a more socialized standard of knowledge and morality must be sought.

#### SOCRATES, PLATO, AND ARISTOTLE

**Dialectic method of Socrates.** — This mediating effort was begun by Socrates (469–399 B.C.). While he started

with the formula of Protagoras, he maintained that the "man" indicated thereby was not the individual, but mankind as a whole. It is not the peculiar view of any individual that represents the truth, but the knowledge that is the same for everyone. The former, which the sophists considered "knowledge," Socrates held to be only "opinion," and declared that the reason men think so differently is because each sees but one side of the truth. He believed that everyone could get at universal knowledge by stripping off individual differences and laying bare the essentials upon which all men are agreed. He conceived it to be the mission of the philosopher or teacher to enable the individual to do this, and he endeavored to deal with the mind of all those with whom he came in contact, so that they would form valid conclusions.

By his method of educating people, known as the *dialectic* or "conversational," Socrates encouraged the individual to make a definite statement of his belief, and then, through a set of clever questions, caused him to develop his thought, until he became so involved in manifest contradictions that he was forced to admit that his view had been imperfectly formed. He thus caused the individual to see that the view he had first expressed was mere "opinion" and but a single phase of the universal truth.

*Plato's Republic and system of education.* — But the believers in the old traditions and institutional morality felt that the educational efforts of Socrates were atheistic and immoral. They persuaded Athens to give him the hemlock, and thus destroyed the man who might have proved her savior. A pupil, Plato (427-347 B.C.), undertook to continue his work, but Plato's aristocratic birth and temperament caused him to underestimate the intelligence

of the masses. He held that they were incapable of attaining to "knowledge" — that they possessed only "opinion." In his most famous dialogue, *The Republic*, he endeavors to show that the ideal state can exist only when the entire control of the government is entrusted to the "philosophers," or intellectual class, who alone possess "real knowledge."

**Plato's training for the three classes of society.** — Those who are to compose the three classes of society Plato wishes to select during the educational process on the basis of their ability. For all boys up to eighteen years of age he prescribes an education similar to that in vogue at the palaestra, didascaleum, and gymnasium, except that he would somewhat expurgate the literary element, and would confine the musical training to the simpler melodies and instruments. The youths who prove capable of going beyond this lower education are next to take up the cadet training between eighteen and twenty, but those who are incapable of further education are to be relegated to the industrial class. Those capable of going on with higher education are to be determined during the cadet period, while those who here reach their limit become members of the military class.

As Athenian education did not extend beyond the twentieth year, Plato is here obliged to invent a new course of study that will afford a training for the highest social class. This additional course, he declares, should also be graded in order that a further test of intellectual and moral qualities may be made. Arithmetic, plane and solid geometry, music, and astronomy are to occupy the first ten years of the course. These subjects, however, are not to be studied for calculation or practical purposes of any sort, but entirely from the standpoint of theory or the

universal relations underlying them, since only thus can they furnish a capacity for abstract thought. After this, at thirty, the young men who can go no further are to be placed in the minor offices of the state, while those who have shown themselves capable of the study of dialectic go on with that subject for five years longer. It then becomes the duty of these highest<sup>(3)</sup> philosophers to guide and control the state until they have reached the age of fifty, when they may be allowed to retire.

**Influence of Plato's system of education.** — Thus, where Socrates found the basis of universal truth in every one, Plato held that only one class of people, the most intellectual, could attain to real knowledge. He, therefore, maintained that the philosophers should absolutely guide the conduct of the state, and that education should be organized with that in view. Plato's ideal state would thus become a sort of intellectual oligarchy, and in a way was a return to the old principle of subordinating the individual to society. Indeed *The Republic* quite neglected human will as a factor in society and assumed that men can be moved about in life, like pieces upon the chess board. And even if Plato's educational scheme had been feasible, it provided no method of evolution from current conditions, and if it were further granted that this order of things could be established at once, Plato put the ban upon all innovation or change, and so closed the door to progress.

Nevertheless, Plato has had considerable influence upon the thought and practice of men since the Greek period. The ideal society where everything is well managed, and everyone is in the position for which nature intended him, has ever since the day of *The Republic* been a favorite theme for writers, as witness More's *Utopia* (see p. 124 f) and the *New Atlantis* of Bacon (see p. 173 f.). A specific

movement that shows the impress of Plato is the formulation of the more advanced studies of the medieval "seven liberal arts" under the name of the "quadrivium" (see p. 75). It is even possible that the whole conception of "liberal" studies and the doctrine of "formal discipline" (see p. 181 f.) may be traced back to Plato's idea that the mathematical subjects in the course for philosophers should never be studied from the practical point of view. On the whole, the writings of Plato have been a factor in educational theory and practice that cannot be overlooked.

**Aristotle's ideal state and education.** — A more practical attempt to unify the new with the old in Athenian society and education was made by Aristotle (384-322 B C), the pupil of Plato. This philosopher had obtained an excellent scientific training, and in that spirit discusses the ideal state and the training of a citizen. His method of investigation is inductive, and before formulating his own conception of an ideal state, in his *Politics* he makes a critical analysis of Plato's *Republic* and *Laws*, and analyzes the organization of many other states, both ideal and actual. After concluding that a democracy is the best type of government for the good of the governed, he considers in detail the proper natural and social conditions for such a state.

Among these practical considerations is the proper education to make its citizens virtuous. In his investigation of education he finds that there should be three periods, emphasizing bodily, impulsive, and intellectual development respectively. The training of the body is a preparation for the period of formal schooling, which is to last from seven to twenty-one. This period is divided into two stages by puberty, the first to be devoted to the training of the impulsive or irrational side of the soul, and the

second to that of the intellectual or rational side. The development of the body he wishes to start even before birth by having the legislator "consider at what age his children should marry and who are fit to marry." Also he deems it necessary to sanction the Spartan usage of "exposing" (see p. 30) all deformed and weakly children. However, his advice concerning the food, clothing, and exercise of children is humane and in keeping with the best modern hygiene.

**Aristotle's studies for periods of formal education.** — The course of study for the impulsive period of education is largely the same as that in use at Athens — gymnastics, music, and literary subjects, although Aristotle recommends some reforms. Gymnastics is intended for self-control and beauty of form, and the making of neither athletes nor warriors should be the object, since the training of the former exhausts the constitution, and that of the latter is brutalizing. The literary subjects, which with Aristotle include drawing, as well as reading and writing, are not to be taught merely for utilitarian reasons. Music is likewise to be used not so much for relaxation or intellectual enjoyment as for higher development. Since melodies that afford pleasure are connected with noble ideas, and those which give pain are joined to debased ideas, the study of music "cultivates the habit of forming right judgments, and of taking delight in good dispositions and noble actions."

Such was to be the training for the body and for the irrational period, but how Aristotle would have advised that the education of the rational soul be carried on can only be surmised, since the treatise breaks off suddenly at this point. If it had been completed, it would probably have included a higher training in mathematical subjects



and dialectic similar to that advocated by Plato, and, judging from Aristotle's own predilections, it is not unlikely that he would also have added some of the physical and biological sciences.

**Influence of Aristotle's work.** — Thus Aristotle, like Plato, endeavored to work out the harmonizing of individual with social interests by the creation of an ideal state. His *Politics* was much less visionary than *The Republic*, but did not fully recognize that the day of the small isolated states of Greece, with their narrow prescriptions for patriotism and social order, had passed forever. Aristotle hoped to achieve some reform by departing but little from existing conditions and reading a philosophy into them, and this bondage to the times prevented his educational system from offering any advance beyond that of Plato. But while Aristotle had little effect upon the society of the times, his works have since been considered of great value, and the methods that he formulated have been most important. He not only started or made the first great contributions to a number of sciences, but he crystallized the laws of thought itself. A more important effect of Aristotle's ideas has been that upon the formulation of doctrine in the Christian Church. After the spread of Mohammedanism, which had largely absorbed the Aristotelian principles, the Church, though at first bitterly opposing them, finally found it impossible to suppress them, and began to clothe her own doctrines in their dress (see p. 85).

#### POST-ARISTOTELIAN SCHOOLS AND UNIVERSITIES

**Epicureans, Stoics, and Skeptics.** — But the harmonizing attempt of Aristotle was fruitless. Like Socrates and Plato, he failed to reconcile with the old and settled

order the ever-expanding movement toward individualism. Thus all efforts to control the individualistic and disintegrating tendencies of the times were in vain, and the conquest of the Greek states (358-338 B.C.) by Philip of Macedon was only symptomatic of the complete collapse of corporate life and the inability to reconstruct it successfully. Philosophy no longer considered the individual from the standpoint of membership in society, but concerned itself with the welfare of the individual and the art of living. Individualism was completely triumphant, and education was considered simply as a means to personal development or happiness. The new theories of life and education were formulated by such schools of philosophy as the Epicureans, Stoics, and Skeptics, which kept themselves far removed from society. None of these "schools" could be so termed in the sense of offering an education, but rather in the modern usage of a group of adherents to certain teachings. They spent their energy, for the most part, in interpreting, elaborating, and lauding the original teachings of the founders, and with them a stereotyped dogmatism took the place of philosophy.

**Schools of the rhetoricians.** — But these schools were not the only outcome of the teaching of the sophists. Just as they came about gradually from the speculative tendencies of the sophists as developed through certain famous philosophers, there likewise grew up, more directly from the sophistic efforts to train young men in rhetoric and public speaking, a multitude of rhetorical schools. In these a formal study was made of oratory and the knowledge of the day. Their professed object was to make successful men of the world, and they laid little claim to teaching anything solid or profound, much less to forming any philosophic habits. They succeeded in spreading

a popular education among a people that had lost all hope of a political life, but soon degenerated into the use of narrow and formal methods. The later rhetoricians attempted to hasten oratorical training and preparation for life by teaching their pupils ready-made speeches and dialogues, together with a general knowledge of current questions.

**University training at Athens and Alexandria.** — From these two classes of schools, the philosophical and the rhetorical, the fame of Athens spread rapidly, and from the fourth century B. C. onward the number of young men from all over the civilized world who came there to study steadily increased. Before the close of the century the old cadet training of Athens was united with this intellectual education, and there sprang up a regular institution or university, which the young Athenians and students from outside might attend. Before long, the Hellenic world boasted other universities, such as those at Rhodes, Pergamon, Alexandria, and Rome. Until almost 300 A. D. Athens remained the chief intellectual center of civilization, and attracted students from all parts of the Roman empire. Gradually, however, the higher education there tended toward the study of rhetoric alone and artificiality grew apace.

In consequence, Alexandria came to displace Athens as the center of culture, and her university became the leading one of the world. Here the various philosophic and religious sects gathered to study and discuss, and the abstract Greek philosophy united with the more concrete beliefs of the Orient, especially Judaism and Christianity. Thus there flourished here the various systems of religious philosophy known collectively as "Hellenistic," such as Neopythagoreanism, Philonism, Gnosticism, and Neoplatonism. Considerably before this, too, there had

developed at Alexandria the Ptolemaic theory of the universe. Other noted investigations, like those of Euclid in geometry, Archimedes in physics, Eratosthenes in astronomy, and Diophantus in algebra, also bore witness to the intellectual activity of this university.

**Extension of Hellenic culture.** — It can thus be seen that the political downfall of Athens had only prepared the way for a larger intellectual influence. As Alexander extended his yoke over one Eastern country after another, he had carried with him all the culture of Greece, and within a century of his death the whole Orient was saturated with Greek philosophy, education, literature, and art, and was everywhere dotted with Greek gymnasia, stadia, and theaters. Similarly Rome, which had come somewhat into contact with Greece before conquering her, had been tinctured with Greek life and learning, and, after her absorption of Macedon and Greece, fell under the spiritual thrall of the subjugated people.

The history of Greek civilization and education is so intermingled with the Roman that it can scarcely be distinguished from it. The Greek schools of philosophy and rhetoric were continued in Rome, Roman youths made up a great body of the attendance at the universities of Athens and Alexandria, and the Roman emperors did much for the support and extension of the work in these institutions. Hence from the Greek education have developed some of the most striking intellectual and esthetic achievements that civilization has known.

#### SUMMARY OF THE CHAPTER

The Spartan training was intended to serve the state by making warriors, and little attention was paid to intellectual education. At first the Athenian education also was mainly concerned with serving

the state For the earliest stage of the boy's education, there were schools of two types — one for intellectual training, as well as one for physical, from fifteen to eighteen a more advanced physical training was given; and then, for two years, a preparation for military life

After the Persian wars, the Athenians adopted ideals of education affording a larger recognition of individualism. The sophists introduced the new educational practices, and pushed individualism to an extreme The systematic philosophers — Socrates, Plato, and Aristotle — tried to mediate the outworn institutional education and the extreme individualism

Socrates held that the sophistic "knowledge" was only "opinion," and that the more universal knowledge could be reached in every person by stripping off his individualism But Plato maintained that only the intellectual class could attain to knowledge For them he formulated a new course of study, in addition to that in vogue, consisting of mathematical subjects and dialectic Aristotle held that the training for everyone before seven should be bodily, up to fourteen, the irrational soul should be trained; and until twenty-one, the rational While Plato and Aristotle had little effect upon educational practice at the time, they have since greatly influenced education.

After Aristotle there arose individualistic schools of philosophy and formal schools of rhetoric, and out of them universities sprang up. Then Greek culture and education spread throughout the world.

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## CHAPTER IV

### THE EDUCATION OF THE ROMANS

The name of Rome is still suggestive of power and organization. These characteristics seem to have been innate; but the significance of Roman development to the history of progress and education was largely due to the fact that, in her spread over the civilized world, the Eternal City amalgamated the Greek civilization with her own. Rome could not be Hellenized, however, without making some contributions to the result from her own genius. For that reason it is important to learn something of Roman civilization and education, crude as they were, before they came into contact with Greek culture.

#### EARLY EDUCATION IN ROME

**Informal training for everyday living.** — In the early days the Romans were animated by intense patriotism and love for military achievement and wished to train their youth to become strong in war and civic life. They held that everyone was bound to subordinate himself to the welfare of the state, and in this respect the purpose of their education was at first not unlike that of the Spartans. While they believed that such a surrender of identity should be brought about voluntarily, rather than through compulsion of law and civic organization, they could scarcely be expected, with their absorption in mere material accomplishment, to attain to the Athenian ideal of a full and harmonious development of one's whole nature.



They looked not for harmony, proportion, or grace, but for stern utility. They were dignified, grave, and serious, and aimed to produce a devoted and hardy race.

Until the Greek institutions began to be adopted, no schools existed in Rome, except possibly the *ludus* or elementary school. During this pristine period education consisted in a practical training for everyday living, conducted largely through the family. In childhood the boys and girls alike were given a physical and moral training by their mother, but, as the boy grew older, he went more in the company of his father, and learned efficiency in life informally through his example and that of the older men, while the girl was taught at home by her mother. If the boy belonged to a patrician family, he might acquire much knowledge concerning Roman customs and law by hearing his father advise and aid the family *clientes* ("dependents"), and by attending banquets with him. He might also receive an apprenticeship training from his parent or some other older man in the profession of soldier, advocate, or statesman. In case he was born in a less exalted station, he might learn his father's occupation at the farm or shop. The girl, whatever her social status, was trained by her mother in the domestic arts, especially in spinning and weaving wool.

Probably through their parents children learned to read and write, and they committed to memory stories of Roman heroes, ballads, martial and religious songs, and the *Twelve Tables* of national laws, after these had been codified (451 B. C.). Physical exercise was secured largely by games, which were mostly in imitation of future occupations, and gymnastics were employed as a training for war. The usages of home and public religion also played an important part in the education of the young Romans,

especially since almost every activity in life was presided over by some deity, whom it was necessary to propitiate when engaging in it.

**Effect upon Roman efficiency and character.** — Thus education in early Rome was practical and to some extent occupational. It was intended to produce efficiency as fathers, citizens, and soldiers. It consisted in training the youths to be healthy and strong in mind and body, and sedate and simple in their habits, to reverence the gods, their parents, the laws, and institutions, and to be courageous in war, and familiar with the traditional agriculture, or the conduct of some business. It did produce a nation of warriors and loyal citizens, but it inevitably tended to make them calculating, overbearing, cruel, and rapacious. They never possessed either lofty ideals or enthusiasm. Their training was best adapted to a small state, and became unsatisfactory when they had spread over the entire Italian peninsula. The golden age of valor and stern virtue had then largely departed, and they began unconsciously to seek a more universal culture. While such a people regarded the Greeks as visionary, just as the Greeks looked upon them as barbarians, they felt instinctively that only by absorption of the Hellenic ideals could their cosmopolitan ambitions be carried out.

#### EDUCATION AFTER ABSORPTION OF GREEK CULTURE

Even in very early days there was some infiltration of Greek culture into Rome. This movement received a great impulse through the conquests of Alexander (334-323 B.C.) and the absorption of Macedon by Rome (168 B.C.), but it was not until about half a century after Greece itself had become a Roman province (146 B.C.)

that the Greek educational ideals and institutions can be said to have been completely absorbed by Rome. This new type of education was thus well established by the first century B. C. It may be said to have remained almost unmodified until toward the end of the second century A. D., when political conditions at Rome became most unstable and the period of degeneracy set in. During these three centuries of Hellenized Roman education, educational institutions of three levels resulted from the amalgamation. They were (1) the *ludus* or school of the *litterator*, as the lowest school was called, (2) the "grammar" school, taught by a *grammaticus* or *litteratus*; and (3) the schools of rhetoric and later the universities, which furnished a somewhat higher education.

**Training in the *ludus*.** — The *ludus*, or lowest school, may possibly have existed before the process of Hellenization even began, but if it did, it must have been intended simply to supplement the more informal training of the home. Whenever originated, it probably taught at first only reading, writing, and rudimentary calculation, as in the family, through the medium of historical anecdotes, ballads, religious songs, and the *Twelve Tables*. But as the Greek influence crept in more and more, the literary content was somewhat extended. About the middle of the third century B. C., Livius Andronicus translated the *Odyssey* into Latin, and a number of epics, dramas, and epigrams were soon composed after Greek models. These works, in whole or in part, were introduced into the curricula of the *ludi*, and by the beginning of the first century B. C. the *Twelve Tables* had been displaced by the Latinized *Odyssey* of Andronicus.

The methods of instruction in the *ludus* were *memoriter* and imitative. The names and alphabetic order of the

letters were first taught without any indication of their significance or even shape, and all possible combinations of syllables were committed before any words were learned. Reading and writing were then taught by dictation, and, in tracing the letters on wax tablets with the stylus (Fig. 7),

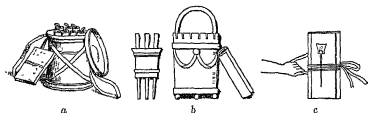


FIG 7 School materials from wall paintings a, wax tablet and *capsa*, containing rolls or books, b, three *stili*, *capsa*, and roll leaning against it, c, wax tablet, with stylus tied to it

the hand of the pupil was at first guided by the teacher. Calculation was learned by counting on the fingers, by means of pebbles, or through the abacus, and eventually sums were worked upon the tablets.

Methods so devoid of interest were naturally accompanied by severe discipline. The rod, lash, and whip seem to have been in frequent use, and the names ordinarily applied to schoolmasters in Latin literature are suggestive of harshness and brutality. Moreover, a fresco found at Herculaneum depicts a boy held over the shoulders of another, with the master beating the victim upon the bare back (Fig. 8). Under these circumstances, no real qualifications were required of the teacher, and his social standing was low. The Greek custom of having the boy accompanied to and from school by a slave that was otherwise incapacitated by age or physical disability, soon came to be imitated by the Romans. When a special building was employed for the school, it was usually a mere

booth or veranda, and the pupils sat on the floor or upon stones.

**Course in the Greek and Latin grammar schools.**—The “grammar” school grew out of the increasing literary work of the *ludus*. But, while offering a more advanced course, it would seem to belong in part at least to the elementary stage of education, especially as its work was



FIG 8 Scene at a *ludus* or Roman elementary school, taken from a fresco found at Herculaneum

never sharply divided from that of the *ludus*. The young Roman might attend both a Greek and a Latin grammar school, but, if he did, he usually went first to the Greek school. The curriculum in each consisted, according to Quintilian, of “the art of speaking correctly” and “the interpretation of the poets,” or, in other words, of a training in grammar and literature. “Grammar” may, however, have included some knowledge of philology and derivations, as well as drill on the parts of speech, inflections,

syntax, and prosody, and practice in composition and paragraphing. The literary training was obtained by writing paraphrases of the best authors, textual and literary criticism, commentaries, and exercises in diction and verse-writing. Some other studies, like arithmetic, geometry, astronomy, geography, and music may in time have also been added from the Hellenic learning, but the Romans naturally gave them a practical bearing. Some gymnastics, mostly for military training, were often in the course.

The methods in the grammar schools were somewhat better than those of the *ludus*, but the commentary of the teacher on the text was usually taken down *verbatim* by the pupil. The discipline, in consequence, was not much in advance of that of the lower schools. But the accommodations for these secondary schools were decidedly superior, and the buildings not only possessed suitable seats for the pupils and teacher, but were even adorned with paintings and sculpture. ✓

**Broader training of the rhetorical schools and universities.** — The "rhetorical" schools were a development of the work in debate that had gradually grown up in the grammar schools. The earliest of these institutions at Rome were Greek, but by the first century B.C. there had arisen a number in which Latin was used. While they afforded a legal and forensic training and seem more professional in spirit than the grammar schools, they were by no means narrow. The orator was for the Roman the typical man of culture and education, and he was supposed not only to have been trained in eloquence and law and history, but to possess wide learning, grace, culture, knowledge of human emotions, sound judgment, and good memory. Said Quintilian, the Roman authority on education :

We are to form, then, the perfect orator, who cannot exist unless as a good man, and we require in him, therefore, not only consummate ability in speaking, but every excellence of mind. For I cannot admit that the principles of moral and honorable conduct are, as some have thought, to be left to the philosophers, since the man who can duly sustain his character as a citizen, who is qualified for the management of public and private affairs, and who can govern communities by his counsels, settle them by means of laws, and improve them by means of judicial enactments, can certainly be nothing else but an orator (*Institutes of Oratory*, Preface.)

Besides a training in oratory, these schools furnished a linguistic and literary education of some breadth. They may be considered as belonging partly to the secondary and partly to the higher stage of education. The youths were exercised first in declamation on ethical and political subjects, which would bring in fine distinctions in Roman law and ethics, and later they were given practice in three types of speeches — deliberative, judicial, and panegyric. Attention was given to all the various factors in making a successful oration: the matter, arrangement, style, memorizing, and delivery.

When the young Roman had completed his course at a rhetorical school, he might, if he were ambitious, go to the university at Athens or Alexandria for a higher training. Later a university also sprang up at Rome, and before long these institutions spread throughout the empire. The Greek influence caused a large number of universities to be established in the East, but a few were also located in the West, as in the case of the flourishing university at Massilia (now Marseilles). The latter institutions gave more emphasis to practical subjects than those in the East. In several instances the universities found their nucleus in one of the many libraries that were started with books brought from the sacking of Greece and Asia Minor.

## INFLUENCE OF ROMAN EDUCATION

**Subsidization and decay of education.** — Thus, through the adoption of the institutions of the Greeks, Roman education became thoroughly Hellenized. Although the various types of schools spread throughout the empire, there was, of course, no such thing as a real educational system, except as the government gradually came to subsidize all schools. Thus the different emperors accomplished in several ways — by contributing to school support, paying a salary to certain teachers, granting teacher exemption from taxation and military service, or offering scholarships to a given number of pupils. As a result, schools came to be created in many cases for the purpose of getting these special privileges for the teachers, rather than for promoting education. To stop these abuses, the emperor in 425 A. D. decreed that he had the sole authority to establish schools, and that a penalty would be laid upon anyone else assuming such prerogative. In this way education came fully into the hands of the imperial government, and the basis for the idea of public schools was laid for the first time in history.

Before this, however, Roman education had greatly deteriorated. With the political and moral decay that were obvious after the second century A. D., education became merely a formality and mark of aristocracy. The training in oratory was continued, because it was a necessary qualification for entering the senatorial class, but it had lost its real function, since there was no longer any occasion for oratory when the emperor dominated all the government and law. It was not intended to furnish a training of any value in life, and the careful literary preparation was more and more shirked. While the gram-



marians and rhetoricians were still held in high esteem, they contented themselves with mere display, and wandered from town to town more for the purpose of entertaining than of teaching. Glittering phrases, epigrams, and other artificialities took the place of instruction and argument.

**Creation of a universal empire, legal system, and church organization.** — But the Roman education and civilization had left their impress upon the world. This was accomplished by the practical nature of the Romans, and by their ability to make abstract ideals concrete and embody them in institutions that have been useful to civilization and progress. Through them was created the idea of a universal empire, which has been influential throughout the world's history. Similarly, the concept of law originating with the Greek philosophers became in the hands of the Romans the great system of principles that underlies and guides all our present civilization. And it was the Roman genius for organization that institutionalized an obscure religious sect and elevated it into the position of a world religion. If Judaism furnished the world with exalted religious ideals, and if from Hellenism came striking intellectual and esthetic concepts, the institutions for realizing these ideals originated with Rome.

#### SUMMARY OF THE CHAPTER

The contribution of the Romans to progress was largely due to their absorption of Greek culture, but their primitive training had an influence in itself. This was mostly civic and practical, and was given informally in the family and the forum.

Through amalgamation with the Greek, Roman education maintained three grades of schools: (1) the elementary school or *ludus*, (2) the "grammar" school, and (3) the rhetorical school. Beyond the education of these schools, a young Roman might attend a university.

Schools were gradually subsidized by the emperors, but, with the increasing domination of the emperor, education eventually deteriorated into a formal qualification for senatorial rank. The practical Romans, however, created a universal empire and legal system, a universal religious organization, and other institutions for modern society.

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## CHAPTER V

### EDUCATION OF THE EARLY CHRISTIANS

#### EARLIEST CHRISTIAN EDUCATION

**"Otherworldly" training of the Christians' religion.** — The actual social conditions amid which the religion of Christ was born, and with which it was destined to come into conflict, were most degraded. The Roman world had become sunk in vice and corruption. The Roman virtues of patriotism, bravery, and service to the state had largely disappeared with the development of the empire, and were impotent in checking the widespread depravity. Nor could the lofty Greek thought accomplish much, since it was too intellectual and philosophic to touch the masses. While the more philosophic forms of Judaism and the Roman development of Stoicism tended to raise the tone of morals, not even these forces could have accomplished a successful reform in Roman society, without the stimulus and wide appeal of the Christian teachings. Christianity was the ethical and universal religion needed as a leaven. Its appeal was to the emotions rather than to the intellect, and this enabled it to reach the masses, for everybody can feel and have faith, even when he cannot understand.

The earliest Christians were largely illiterate, but their religion itself served as an education. Although practically deprived of all intellectual development, they received moral training of a very high order. They showed an extreme reaction to the vicious morals of the

time, and endeavored to cultivate the higher ideals inculcated by the teachings of Christ. They had gathered from the statements of the Master that he would soon return and this world would come to an end. They, therefore, concerned themselves entirely with a preparation for "Jerusalem, the golden" and "the life everlasting," and the ideal of this most primitive Christian training may properly be described as "otherworldly."

**Catechumenal schools.** — Thus, while the very unpopularity of their religion and the segregation of their Church membership gave the Christian life all the effect of a species of schooling, the early Christians had no regular schools of their own. Early in the second century, however, when the Church began to extend itself rapidly, it seemed necessary to insist upon some sort of formal instruction as preliminary to Church membership. It was also deemed wise to fix a period of probation after the profession of one's faith in Christ, in order that informers might not be admitted to the services, or the Church disgraced by apostasy or the lapses of those who had not well considered the step. These demands were met by the gradual institution of actual schools and popular instruction in Christian principles for the Jewish and pagan proselytes, who were known as *catechumens*.

While some effort was made to lift the pupils of these "catechumenal" schools from the bondage of ignorance, they were primarily trained in the things needful for their soul's salvation, and the ideal of Christian education remained prevailingly "otherworldly." The instruction was carried on in the portico or other special portion of the church; and consisted in moral and religious teachings, reading and memorizing the Scriptures, together with some training in early psalmody. The course usually

lasted three years, and while some distinction was made between the general division of catechumens and those almost ready for baptism, there is little ground for supposing that the schools were divided into actual classes. The meetings in the church were held several times a week.

### HELLENIZED CHRISTIANITY

Union of "worldly" with "otherworldly" training. — While the Christian ideals and training were thus developing and crystallizing, the Greek philosophy in its Roman form was being continued and expanded. This movement has been seen to be very different from early Christianity in its general purpose. It concerned itself chiefly with life in this world. The problem it attempted to solve was how one should live so as to get the most satisfaction out of life. The purpose of the Hellenized Roman schools may, therefore, be accounted as "worldly," just as the Christian schools were "otherworldly" in their aim. A general feeling of this marked difference in purpose and organization between Christianity and the contemporaneous Greco-Roman culture was destined to cause an opposition to pagan learning to spring up among the Christians.

But for two or three centuries this is scarcely noticeable, especially in the Eastern empire, where it was felt that philosophy was, like Christianity, a search after truth; and, as far as it went, confirmed the Bible. There was even a tendency to unite the two movements. As the new religion spread throughout the Roman world, and was compelled to defend itself against charges of immorality, atheism, and treason, the educated converts attempted to set forth the Christian teachings in terms of Greek thought, and to tackle speculative questions that had never been considered by Jesus and his disciples. The first Hellen-

izing Christians have been known as *Apologists*, since their efforts were directed toward reconciling Christianity with the Greco-Roman philosophy. In general, they mingled Stoicism with the teachings of Jesus. Later, other Hellenistic philosophers unified Christian doctrine with the principles of Pythagoras, Plato, and Aristotle. Perhaps the most extreme of these philosophic positions within Christianity was a combination with Platonism known as *Gnosticism*, which was intended to be a sort of esoteric knowledge and to show the relation of Christianity to other religions and to the universe.

**Catechetical, cathédral, and other later schools.** — In this way, during the second and third centuries, all the Christians at Alexandria, which had become the great seat of Hellenistic philosophy, had their theology tinctured with Greek thought. Before long a sort of theological, or "catechetical," school was gradually organized at this center, to counteract the heathen schools there and to afford higher instruction for Christian teachers and leaders. This school had no building of its own, and the students met at the teacher's house, but they were able to take advantage of the facilities at the University of Alexandria. In addition to a thorough training in the Bible, the pupils were allowed to study all types of Greek philosophy except Epicureanism, the whole range of sciences, classical Greek literature, grammar, rhetoric, and other higher subjects of the pagan schools, but from a different point of view. Thus the Greco-Roman and the Christian movements had formed an alliance in education, and in this catechetical school we find an attempted union of the "otherworldly" ideal with the "worldly."

The best known heads of the catechetical school at Alexandria were Clement (150-215) and Origen (185-253).

They were among the most noted of the Eastern Fathers in the philosophic interpretation of Christianity, and their work contributed not a little to heretical doctrine. Origen may even have been expelled for heresy. At any rate, he opened a new school of the same sort at Caesarea, where he was kindly received. Other catechetical schools sprang up rapidly at Antioch, Edessa, Nisibis, and elsewhere throughout the East. Later the accession of the followers of Nestorius, whose Hellenized theology had in 431 been proscribed by the Church at the Council of Ephesus, very greatly increased the importance of these cities as intellectual centers. In addition to the translations already there, the Nestorian Christians accumulated a larger range of the original Greek treatises on philosophy, science, and medicine.

But before this, higher education of the Hellenic type came to be regularly used by the bishops in training their clergy, and promotion in the Church began to depend upon having had this education. So higher schools of this sort were gradually instituted in every bishopric at the see city, and became known eventually as "episcopal" or "bishop's" schools, or, from their location at the bishop's church, as "cathedral" schools. These cathedral schools became most important institutions in the Middle Ages. From them were derived all the schools of Western Europe, but the bishop soon became too busy to attend to them himself and was forced to commit them to various officials. Thus they developed in time into at least three types — the "grammar" school, taught by one of the cathedral canons, known as the *scholasticus*; the "song" or music school, taught by the *cantor* or *precentor*; and the "chorister's" school, which offered a combination of the training in the two other schools. Thus the cathedral



schools virtually took the place of the old pagan schools supported by the Roman emperors.

#### SEPARATION FROM HELLENISM

**Opposition to Greco-Roman culture; later absorption.**—However, by the century after the foundation of the catechetical school at Alexandria, the Christians had begun to grow suspicious of Greco-Roman culture and the “worldly” ideal in education. Even the Eastern or Greek Fathers of the Church appear to have cooled considerably in their attitude toward philosophy, and the Western or Latin Fathers were much more pronounced in their opposition. Roman Christians could not forget the immorality of those who had been connected with this culture, nor the abuse and insults that these pagans had heaped upon them. They felt, too, that the one great mission of the Church was ethical, that Christ’s second coming was at hand, and that all philosophy and learning were scarcely pertinent.

Nevertheless, despite this growth of opposition to pagan philosophy, primitive Christianity could not endure in its simplicity after it had once been in contact with the advanced intellectual concepts of the Greeks, as modified by the organizing genius of the Romans. Both Greece and Rome left a permanent impress upon Christianity; and, though dead, they yet live in the Christian Church. The influence of Greek philosophy is seen in the formulation of a system of Christian doctrine. This appears in the development of the *Apostles’ Creed* during the second century, in the selection of a canon of sacred writings or *New Testament* during the third century, and still more in the *Nicene Creed* (325), which was not formulated until Christianity had been very largely Hellenized.

Similarly, the Greek tendency to attribute universal validity to their sacred writings, and the pomp, ceremonies, and mysteries of the Hellenic worship, are more or less apparent in the various ecclesiastical tenets and usages. On the other hand, the Roman concepts of administration appear in the organization of the Church, which seems to have closely paralleled the Roman civil polity. By the third century priests and bishops had largely come to be similarly located, and to correspond in control, to the Roman district and city magistrates respectively. Finally, in 445, the recognition of the supremacy of the Bishop of Rome established a visible head of the entire Church, corresponding to the position of the emperor on the civic side.

**Rise of monastic schools.** — Thus it has been seen how the two great movements of Greco-Roman culture and Christian teaching arose independently, in time united, and later separated, although, after separation, each is discovered to have been influenced by the other. That is, we find that at first the nature of primitive Christianity is embodied in the catechumenal schools, then the union of Hellenism and Christianity appears in the catechetical schools; and finally, through the alienation of the Christians from Greek learning, their education seems to have been left alone in the field, but to have been somewhat affected by its long association with Greco-Roman culture. It then found an additional means of expression in the "monastic" schools, in which there was naturally a tendency to revert to an ascetic or "other-worldly" ideal, and to leave intellectual attainments largely out of consideration. But these monastic institutions are to be grouped with medievalism and belong more distinctly to the next chapter.

## SUMMARY OF THE CHAPTER

Christianity accomplished much in the reform of the degraded Roman society. The earliest education of the Christians came through their "otherworldly" life, but actual schools, called "catechumenal," before long furnished a moral and religious training.

After the amalgamation of Christianity with Greco-Roman philosophy, "catechetical" schools furnished a higher training. When higher education came to be utilized by the bishops for training their clergy, institutions known as "episcopal" or "cathedral" schools were founded.

Later, although opposition grew up among the Christians to the culture of Greece and Rome, its impress was found to have been left upon the doctrines and organization of Christianity.

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## CHAPTER VI

### EDUCATION DURING THE MIDDLE AGES

**Characterization of the Middle Ages.** — The Middle Ages may be regarded as an era of both assimilation and repression. On the one hand, the rude German hordes, which had by the sixth century everywhere taken possession of the decadent ancient world, were enabled during this period to rise gradually to such a plane of intelligence and achievement that they could absorb the Greek, Roman, and Christian civilization, and become its carriers to modern times. On the other hand, that this absorption might take place, it was necessary that the individual should conform to the model set, and it was inevitable that bondage to authority, convention, and institutions should ensue.

The main power in effecting this subservience on the part of medieval society was the Christian Church. For it was but natural during the period of assimilation that the Church, which had become completely organized and unlimited in power, should stand as the chief guide and schoolmaster of the Germanic hosts. Hence, under the decree of Justinian in 529, which may be considered to mark the beginning of the Middle Ages, Christian education was left without a rival. The cathedral and monastic schools became almost the sole means of leavening the barbarian lump. Contrary to the view commonly accepted, the educational activities of the cathedral institutions were more important and general than those of the

monastic schools. But the former have already been somewhat discussed, and so much relating to the course and services of the latter will also apply to them that we may now turn to a detailed description of the monastic schools.

### MONASTICISM AND THE MONASTIC SCHOOLS

**Rise of monasticism and the "rule" of Benedict.** — To understand the purpose of the education furnished by the monastic schools, it will be necessary to examine the movement out of which they arose. Monasticism grew up in reaction to the corruption in Roman society and the desire of those within the Church for a deeper religious life. Christianity was no longer confined to small extra-social groups meeting secretly, but represented all walks of society and mingled with the world. It had become thoroughly secularized, and even the clergy had in many instances yielded to the prevailing worldliness and vice. Under these circumstances there were Christians who felt that the only hope for salvation rested in fleeing from the world and its temptations and taking refuge in an isolated life of asceticism and devotion. This led eventually to the foundation of monasteries, in which the monks lived apart in separate cells, but met for meals, prayers, communion, and counsel. Monasticism started in Egypt, but soon spread into Syria and Palestine, and then into Greece, Italy, and Gaul. But in the West monasticism gradually adopted more active pursuits and milder discipline, and the monks turned to the cultivation of the soil and the preservation of literature.

All these monastic activities were crystallized and promoted by the Benedictine "rule." This was a code formulated by St. Benedict in 529 for his monastery at

Monte Cassino in southwest Italy, and it was generally adopted by the monasteries of western Europe. In the forty-eighth chapter of the "rule" he commanded that the monks each day engage in manual labor for at least seven hours and in systematic reading for at least two



FIG 9 A monk in the *scriptorium*

hours. The requirement of daily reading led to the collection and reproduction of manuscripts, and each monastery soon had a *scriptorium*, or "writing-room," in one end of the building (Fig 9). Most of the works copied were of a religious nature and were limited in number, but the monks were occasionally occupied with the Latin classics, and they also became the authors of some original literature, which included histories of the Church, the monasteries, and the times, as well as works upon religious topics.

**Organization and aim of monastic education.** — The literary work of the monasteries soon led to the establish-

ment of regular schools within their walls (Fig. 10). The course in these monastic schools may often have lasted eight or ten years, as boys of ten or even less were sometimes received, and no one could become a regular member of the order before he was eighteen. By the ninth century



FIG. 10. A monastic school.

the schools sometimes also admitted pupils who never expected to enter the order. These latter were called *externi* in distinction to the *oblato* who were preparing to become monks. Some training was also given women in convents for nuns, such as that established by the sister of Benedict.

The aim of education in these monastic schools was clearly otherworldly, and the curriculum was at first elementary and narrow. It included only reading, in order to study the Bible; writing, to copy the sacred books, and calculation, for the sake of computing Church festivals. But after a while the classical learning was gradually introduced in that dry and condensed form of the "seven liberal arts" which had come to be used by the cathedral schools. This medieval canon of studies was a gradual evolution from Greco-Roman days. The dis-



crimination of these liberal subjects may be said to have begun with Plato, whose educational scheme included a higher group of studies, consisting of arithmetic, geometry, music, and astronomy (see p. 39), and during the later days of Greece and Rome these subjects of Plato were combined with the training of the sophists in grammar, rhetoric, and dialectic.

**The "seven liberal arts" as curriculum.** — These "seven liberal arts" were definitely fixed during the fifth and sixth centuries A. D., through several treatises by such writers as Martianus Capella, Boethius, and Cassiodorus; and the grammar, rhetoric, and dialectic eventually became classed as the *trivium* or lower studies, and the arithmetic, geometry, music, and astronomy as the *quadrivium* or higher (Fig. 11). While this curriculum was not a broad one, the scope came to be much wider than would be supposed. "Grammar" was an introduction to literature, "rhetoric" included some knowledge of law and history, "dialectic" paved the way for metaphysics, "arithmetic" extended beyond mere calculation, "geometry" embraced geography and surveying, "music" covered a broad course in theory, and "astronomy" comprehended some physics and advanced mathematics.

The general method of teaching in the monastic schools was that of question and answer. As copies of the various books were scarce, the instructor often resorted to dictation, explaining the meaning as he read, and the pupils took the passage down upon tablets and committed it. The reading books preparatory to the study of literature, many of which are still extant, were generally arranged by each teacher, and careful attention was given to the etymological and literary study of the authors to be read.

As to texts for these schools, the leading works upon grammar were at first the elementary work of Donatus

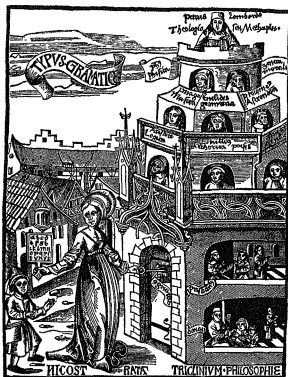


FIG 11 The temple of wisdom An allegorical representation of the medieval course of study reproduced from the *Margarita Philosophica* of Gregorius Reisch, Freiburg, 1504. Donatus (elementary grammar) on the first floor, Priscian (advanced grammar) on second; Aristotle (logic), Cicero (rhetoric), and Boethius (arithmetic) on the third; Pythagoras (music), Euclid (geometry), and Ptolemy (astronomy) on the fourth, Pliny (natural history) and Seneca (ethics) on the fifth, and Peter the Lombard (theology) on top

(fourth century) and the more advanced treatise of Priscian (sixth century), but by the thirteenth century

there had sprung up a series of simplified grammars, which, for the sake of memorizing, were often written in verse. As rhetoric was no longer much concerned with declamation, Cicero and Quintilian were rarely used as texts, but various medieval treatises upon official letters, legal documents, and forms came into use. Dialectic was studied through translations of the *Organon* of Aristotle, Euclid furnished the text on geometry, the works of Boethius were generally used for arithmetic and music, and in astronomy adaptations of the treatises of Aristotle and Ptolemy became the texts.

**Effects upon civilization of the monastic education.** — Thus monasticism accomplished not a little for civilization. While the works produced in the monasteries were often uncritical and superstitious, they compose most of our historical documents and sources for the Middle Ages. And, although monastic schools were decidedly hostile to classical literature as representing the temptations of the world, and at all times their rigid orthodoxy prevented the introduction of any work in science, they, together with the cathedral schools, preserved a considerable amount of Greco-Roman culture. Without the cathedral and monastic schools, the Latin and Greek manuscripts and learning could scarcely have survived and have been available at the Renaissance.

#### CHARLEMAGNE'S REVIVAL OF EDUCATION

**Alcuin's work at the "palace school."** — In the course of the seventh and eighth centuries medieval education met with considerable retrogression. The learning of the sixth century was disappearing, the copying of manuscripts had almost ceased, and the cathedral and monastic schools had been sadly disrupted. The secular clergy, monks,

nobility, and others who might have been expected to be trained, at times seem even to have lost the art of writing, although the leading churchmen must generally have maintained their knowledge of ecclesiastical Latin and some acquaintance with the classical authors and various compilations of the seven liberal arts.

Just before this time the Franks had succeeded in establishing a supremacy over the other barbarian tribes and had spread their rule through what is now France, Belgium, and Holland, and most of western Germany. Under a dynasty of vigorous kings, they now drove back the Moslems, conquered the Lombards and Saxons, and subdued the Slavs and Bohemians, and finally Charlemagne (742-814) even planned to re-establish the western Roman Empire under his sovereignty. This monarch greatly strengthened and centralized his dominions by a number of improvements in external administration, but, even before his recognition as emperor by the pope (800), he had realized that a genuine unity of his people could be brought about only through a much more effective and universal education. He had a keen sense of the unfortunate educational situation, and made every effort to improve it. To assist him in his endeavors, in 782 he called Alcuin (735-804) from the headship of the famous cathedral school at York, England, to be his chief adviser in education.

Through this noted scholar Charlemagne proceeded at once to develop the "palace school." At this royal center the great king, all his family, and many of his relatives and intellectual friends studied under the Saxon educator. Alcuin must, however, have used a more discursive and less *memoriter* method with his adult students than the formal catechetical plan employed in instructing the

youth. Among the subjects taught were grammar, including some study of the Latin poets and the writings of the Church Fathers, rhetoric, dialectic, arithmetic, astronomy, and theology, but Alcuin appears to have had but little command of the Greek learning. Charlemagne himself seems to have become proficient in Latin and other languages, but, in spite of strenuous efforts, he began too late in life to train his hand to write.

**Improvement of the cathedral, monastic, and parish schools.** — With the co-operation of Alcuin, Charlemagne also did everything in his power to increase facilities and improve standards in the existing types of schools. In 787 he issued an educational "capitulary" or decree to the bishops and abbots, "urging diligence in the pursuit of learning and the selection of teachers for this work who are able, willing, and zealous to learn themselves and to teach others." Two years later he wrote a more urgent capitulary to the bishops and abbots, in which he specified the subjects to be taught in the cathedral and monastic schools and the care to be taken in teaching them. Schools seem to have been everywhere established or revived in the various cathedrals, monasteries, and villages, and the instruction in several places became famous.

All these schools came to offer at least a complete elementary course, and some added considerable work in higher education. Reading, writing, computation, singing, and the Scriptures were taught first, but, beyond this, instruction in grammar, rhetoric, and dialectic was often given, and at the more noted cathedral and monastic schools the *quadrivium* also appeared in the course. The schools in the villages, under the care of the parish priests, taught only the rudiments, the Lord's Prayer, the Creed,

and the Psalms. Tuition was free in all schools for those intending to become monks or priests, but for the higher work a small fee was sometimes paid by the laity. It seems to have been generally intended that education should be gratuitous and open to all. A letter of the Bishop of Orleans required it of his clergy; and through a capitulary in 802 Charlemagne strove to make it compulsory.

**Later development under Alcuin and his successors.** — After fourteen years of strenuous service, Alcuin retired from the active headship of the educational system to the abbacy of the monastery at Tours. But even here his educational work did not cease. He soon established a model house of learning and education, whither flocked the most brilliant youths in the empire, and since they rapidly became prominent as teachers and churchmen, his influence upon the schools remained fully as marked as before. He also wrote a number of educational works, mostly on the seven liberal arts, and had a large correspondence about education with kings and the higher clergy. Alcuin, however, was by nature conservative, and with his retirement he became decidedly set and narrow. In his old age he expressed a fear of dialectic and came to repudiate his favorite classic poets.

Fortunately, Alcuin's pupils, who at his death occupied practically all positions of educational importance, retained the broader spirit of his pristine days. This was true in particular of Rabanus Maurus (776-856), whose leadership caused the monastic school at Fulda to become the great center of learning. Rabanus wrote even more prolifically than Alcuin upon grammar, language, and theology, but was not afraid to emphasize the study of classic literature or the new training in dialectic. He also

greatly expanded the mathematical subjects of the curriculum, and tended to ascribe all phenomena to natural laws. Rabanus, in his turn, influenced a large number of pupils, and further impetus was given to intellectual progress, especially by Joannes Scotus Erigena (810-876) during his mastership at the palace school.

Thus during the ninth century and the first half of the tenth there arose, through the initiative of Charlemagne and Alcuin, a marked revival in education, and for several generations the cathedral and monastic schools enthusiastically fostered education and learning. Curricula were expanded and many famous scholars appeared. While, owing to the weakness of Charlemagne's successors and the attacks of the Northmen, learning gradually faded once more, intellectual stagnation never again prevailed. Through the revival of the great Frankish monarch, classical learning had to some extent been recalled to continental Europe from its insular asylum in the extreme West.

#### MOSLEM LEARNING AND EDUCATION

**The Hellenization of the Moslems.** — Another most important influence in awakening medieval Europe was the revival of learning and education that came through the advent of the Moslems. Mohammed, the founder of Moslemism, had been almost illiterate, and the *Koran*, or sacred book, was a curious jumble of Judaistic, Christian, and other religious elements with which Mohammed had become acquainted during his early travels. As long as this religion was confined to the ignorant and unreflecting tribes of Arabia, it served its purpose without modification. But when it spread into Syria and came in contact with Greek philosophy, it had

to be interpreted in Hellenistic terms, in order to appeal to the people there. Hence, during the eighth, ninth, and tenth centuries, through the influence of the Nestorian scholars (see p. 66), the Mohammedans were engaged in rendering into Arabic from the Syriac, or from the original Greek, the works of the great philosophers, mathematicians, and physicians.

The Mohammedan cities of Syria soon became renowned for their learning. In them arose such scholars as Avicenna (980-1037), who wrote many treatises on mathematics and philosophy, and a *Canon of Medicine* that remained authoritative for five centuries. Similarly, there grew up a society called the "Brothers of Sincerity," which in its course of study amalgamated the Moslem theology with Hellenistic philosophy. But the masses of the Mohammedans were as suspicious of Greek learning as the orthodox Christians had been, and toward the end of the eleventh century Hellenized Moslemism was driven from the Orient and found a refuge in northern Africa and in Spain. Here the advanced Mohammedans became known as "Moors," and their works were destined to have a pronounced influence upon the Christians.

**Effect of Moslem education upon Europe.** — Hence in Spain appeared such scholars as Averroes (1126-1198), who became the authoritative commentator on Aristotle for several centuries; and Moorish colleges were founded at Cordova, Granada, Toledo, and elsewhere. In these institutions, while learning was still at a low ebb in the Christian schools, were taught arithmetic, geometry, trigonometry, astronomy, physics, biology, medicine, surgery, jurisprudence, logic, and metaphysics. Arabic notation was also introduced in place of the cumbersome Roman numerals and many inventions and discoveries were made.



These schools and colleges of the Moslems soon had their effect upon Christian education. Through their influence, Raymond, Archbishop of Toledo, by the middle of the twelfth century had the chief Arabic treatises on philosophy translated into Castilian by a learned Jew, and then into Latin by the monks, and Frederick II had scholars render the works of Averroes into Latin. Such translations must have passed through several media — Greek, Syriac, Arabic, Castilian, Latin — and could not have been at all accurate. But, stimulated by this taste of Greek learning, the Christians sought a more immediate version, and a half-century later when the Venetians took the city of Constantinople, the works of Aristotle were recovered in the original and translated directly into Latin.

Meanwhile orthodox Mohammedanism had been coming to the front in Spain. The Hellenized form of Moslem education was overwhelmed, and it was left to Christian schools to continue the work of the advanced Moorish institutions. Moslemism retrograded to its primitive stage, but it had helped bring back learning, especially the works of Aristotle, to Christendom. As the classical learning had been restored from the West during the revival of Charlemagne, it now returned from its refuge in the East through the coming of the Moslems.

#### EDUCATIONAL TENDENCIES OF SCHOLASTICISM

**Nature and rise of scholasticism.** — The activity that most directly tended to awaken the mediæval mind, especially during the latter part of the Middle Ages, is probably to be found in the development of the Church philosophy known as "scholasticism." This movement does not indicate any one set of doctrines, but is rather a general

designation for the peculiar methods and tendencies of philosophic speculation that became prominent within the Church in the eleventh century, came to their height during the twelfth and thirteenth, and declined rapidly the following century. Its history belongs properly to the field of philosophy, but its influence in bringing on the Renaissance and its effect upon education make a brief consideration of its development necessary here.

The name is derived from *doctor scholasticus* which was the title given during the medieval period to the authorized teachers in a monastic or episcopal school, for it was among these "schoolmen" that the movement started and developed. Its most striking characteristics are the narrowness of its field and the intensiveness of its cultivation. Scholasticism began as an effort to vanquish heresy in the interest of the Church dogmas, which until late in the Middle Ages it had not generally been necessary to explain. Even then it was assumed that the Church was in possession of all final truth, which had come to it by divine revelation and was in harmony with reason when fully understood.

It was, therefore, the aim of the earlier schoolmen to show how these doctrines were consistent with each other and in accordance with reason. At first, as with Anselm (1033-1109), it was held that faith must precede reason, and where reason was incapable of penetrating the mysteries of revealed doctrine, it must desist from its efforts. But the conviction gradually gained ground that human reason is reliable and that truth can be reached only through investigation. Abelard (1079-1142) declared that the only justification of a doctrine is its reasonableness, that reason must precede faith, and that it is not sinful to doubt.

**Development of scholastic education.** — A new epoch for scholasticism dawned in the twelfth and thirteenth centuries through contact with the Greek philosophy of the Moors in Spain and the subsequent recovery of some original treatises of Aristotle (see p. 82 f). For a time the Church endeavored to suppress the great philosopher, but, failing to do so, soon utilized his works for its own defense, and even made reason identical with Aristotle, whose authority was not to be disputed. A group of most prominent schoolmen arose, and, as a result of the discussions of Aquinas (1225–1274), Duns Scotus (1265–1308), and William of Occam (1280–1349), it came to be held that the truth is established by the *fiat* of God, and that ecclesiastical dogmas are, consequently, not matters of reason, but purely of faith. As a result of this breach between revelation and reason, there arose two types of truth, and a tendency to choose that type which was supported by reason.

The schoolmen were thus throughout attempting to rationalize the teachings of the Church, and to present them in scientific form. As an education, scholasticism aimed also at furnishing a training in dialectic and intellectual discipline that should make the student both keen and learned in the knowledge of the times.\* The scholastic course of study, which was given at first in the monastic and episcopal schools and later in the universities, consisted in the beliefs of the Church and the limited learning of the times arranged in a systematized form largely on the deductive basis of the Aristotelian logic. This knowledge could all be grouped under the head of philosophical theology.

The best illustration of the formal and dogmatic way in which these doctrines were usually presented can be found

in the *Sententiae* of Peter the Lombard (1100-1160) and the *Summa Theologiae* of Aquinas (1225-1274), which were the standard texts of the day upon theology. The work of Aquinas has four main parts, under each of which is grouped a number of problems. Every problem is concerned with some fundamental doctrine, and is further divided into several subtopics. After the problem has been stated, first the arguments and authorities for the various solutions other than the orthodox one are given and refuted in regular order, then the proper solution with its arguments is set forth, and finally, the different objections to it are answered in a similarly systematic way. Peter the Lombard's work has a like arrangement.

**Influence of scholasticism.** — As a whole, the work of scholastic education has been underestimated. It has been urged that it ruined all spiritual realities by its extreme systemization of religion, that it dealt with mere abstractions, and that it indulged in oversubtle distinctions and verbal quibbles. But the scholastic arguments were not as purposeless or absurd as they seem. For example, the celebrated inquiry of Aquinas as to the number of angels that could stand on the point of a needle is simply an attempt to present the nature of the Infinite in concrete form.\* It is characteristic of reasoning beings to analyze, compare, abstract, and classify, and, while scholasticism may have carried its abstractions, hair-splittings, and scientific terminology to an extreme, it performed a great service for knowledge. It found a confused mass of traditional and irrational doctrines and practices, made them systematic, rational, and scientific, and greatly assisted accuracy in thinking. The discussions of the schoolmen resulted in liberating philosophy from theology, and, without intending it perhaps, scho-

lastic education aided the cause of human reason against dogmatism and absolute authority. It greatly stimulated intellectual interests, produced the most acute and subtle minds of the age, and helped to prepare the way for the Renaissance.

### THE MEDIEVAL UNIVERSITIES

**Rise of the earliest universities.** — A most important effect upon all subsequent education came through the foundation of the medieval universities. These institutions grew out of the old cathedral and monastic schools, but found models largely in the liberal and professional courses of the Moorish colleges. In general, they came into existence through the many broadening influences of the later Middle Ages. Their rise was intimately connected with the stimulus of the Moslem presentation of Greek philosophy and science, with the interest in dialectic and theological discussions, leading to the development of scholasticism, with the reaction from "otherworldliness" resulting from the ideals of chivalry (see p. 96), and with the growth of cities and wealth and the consequent emphasis upon secular interests and knowledge (see pp. 99 ff.). However, while they were all more or less the product of similar factors, no two had exactly the same sort of origin, and special conditions played a part in the evolution of each university. The oldest of these institutions, that at Salerno near Naples, offered instruction in medicine alone, and originated through the survival of the old Greek medical works in southwestern Italy and through the attraction of the mineral springs and salubrity of this particular place. By the middle of the eleventh century Salerno was well known as the leading place for medical study. It was,

however, never chartered as a regular university, although in 1231 Frederick II recognized it as the faculty in medicine for the university he had created at Naples some seven years earlier.

On the other hand, northern Italy became known as the place for the study of Roman law. The cities here, in order to defend their independence, were led to study this subject, and endeavored to find some special charter, grant, or edict from the old Roman emperors upon which to base their claims. Several northern centers were renowned for their investigation of the Roman civil law, but early in the twelfth century Bologna became pre-eminent through the lectures of Irnerius. By him the entire *Corpus Juris Civilis*, a compilation of Roman law made by eminent jurists in the sixth century at the command of the emperor Justinian, was collected and critically discussed.

Influenced by this example, a monk of Bologna, named Gratian, undertook to codify all edicts and formulations of popes and councils in a convenient textbook. The *Decree* of Gratian, which resulted, was almost immediately recognized as the authority upon the subject, and canon law came to be studied here with the same thoroughness as civil law. The university at Bologna was regularly chartered by Frederick Barbarossa in 1158, probably as a recognition of the services of its masters in support of his imperial claims, and faculties of arts, medicine, and theology were established at various times. It was thus the first real university, and its reputation soon became widespread.

Next in order of foundation came the university at Paris, which was eventually the most famous of all. The special interest here, as in this part of Europe generally,

was dialectic and scholasticism. The university grew out of the cathedral school at Notre Dame, which had acquired considerable reputation under the headship of William of Champeaux, Abelard, and Peter the Lombard, but it was not until 1200, after canon law and medicine had been added to the liberal arts and theology, that it received complete recognition by the charter of Philip Augustus.

**Spread of the universities through Europe.** — Salerno, as we have seen, was not a real university, and it did not reproduce its type, but Bologna, and even more Paris, became the mother of universities, for many other institutions were organized after their general plans. At Bologna the students, who were usually mature men, had entire charge of the government of the university. They selected the masters and determined the fees, length of term, and time of beginning. But in Paris, where the students were younger, the government was in the hands of the masters. Consequently, new foundations in the North, where Paris was the type, were usually known as "master-universities," while those of the South were called "student-universities." During the thirteenth and fourteenth centuries it became fashionable for the authorities, civil and ecclesiastical, to charter existing organizations or to found new institutions on one of these two plans, and by the time the Renaissance was well started about eighty universities had been established in Europe. Not all of these foundations were permanent, however, for some thirty have, in the course of time, become extinct, and those which remain are much changed in character.

**Privileges of the universities.** — From the time of the earliest official recognition of the universities, a large variety of exemptions, immunities, and other special privileges were conferred upon the organizations or upon

their masters and students, by the charters of popes, emperors, kings, and municipalities. The students of the universities were in many instances taken under the immediate protection of the sovereigns, and were allowed to be tried in special courts of their own, independent of civil jurisdiction, and to possess complete autonomy in all their internal affairs. Thus, in chartering the University of Bologna, Frederick Barbarossa granted special privileges to the students and professors as follows

That they may go in safety to the places in which their studies are carried on, both they themselves and their messengers, and may dwell there in security. Therefore, we declare by this general and perpetual law that hereafter no one shall be so rash as to inflict any injury on the students or to impose any fine upon them on account of an offense committed in their former province. Moreover, if anyone shall presume to bring a suit against the students on any ground, the choice in the matter shall be given to the students, who may summon the accusers to appear before their professors or the bishop of the city, to whom we have given jurisdiction in these circumstances. But, if indeed the accuser shall attempt to take the student before another judge, even if his cause be most just, he shall lose his suit because of such attempt.

Likewise, masters, students, and their retainers alike were generally relieved from all taxation and from military service. The universities, moreover, were granted the right to license masters to lecture anywhere without further examination (*jus ubique docendi*), and the privilege of "striking" (*cessatio*) when university rights were infringed. If no redress were given in the latter case, the suspension of lectures was followed by migration of the university to another town. This could easily be done, since none of the medieval universities had buildings of their own, and there was no need of expensive libraries, laboratories, and other equipment.



Through such special rights the universities obtained great power and became very independent. Soon the liberty allowed to students degenerated into recklessness and license, and they became dissipated and quarrelsome. This is especially seen in the life of the so-called "wandering students," who migrated from university to university, begging their way, and were shiftless, rollicking, and vicious. The one compensating feature of such degeneracy was their production of jovial Latin and German songs to voice their appreciation of forbidden pleasures and their protest against restraint.

**Organization and course of the universities.** — The term *universitas*, or "university," did not imply originally, as often claimed since, an institution where "everything" was taught, but it was used of any legal corporation, and only in the course of time was it limited to an organization of masters and students. The phrase *studium generale* was also often used of a university, to indicate a school where the students from all parts of civilization were received, and to contrast it with a *studium particulare*, which was confined to pupils of a certain neighborhood. The formation of a university was often preceded by the organization of "nations," or bodies of students grouped according to the part of Europe from which they came, but these nations soon began to combine for the sake of obtaining greater privileges and power. Every year each nation chose a "councilor," who was to represent it and guard its interests. On the side of the masters, the university became organized into "faculties," of which there might be at least four — arts, law, medicine, and theology; and each faculty came to elect a "dean" as its representative. The deans and the councilors jointly elected the "rector" or head of the university.

The course of study to be offered by each faculty was largely fixed by papal decree or university legislation during the thirteenth century. The course in arts, which occupied six years, included the texts on the liberal arts mentioned for the monastic schools (see pp. 76 f), and several of the treatises of Aristotle as rapidly as they were recovered. In the law course, *Corpus Juris Civilis* was the authorized text for civil law, and the *Decree* of Gratian for canon law. The faculty of medicine utilized the Greek treatises by Hippocrates (c. 460-375 B.C.) and Galen (c. 130-200 A.D.), the *Canon* of Avicenna (see p. 82), and the works of certain Jewish and Salernitan physicians. The students of theology put most of their time upon the four books of Peter the Lombard's *Sententiae* (Fig. 11), although the *Bible* was studied incidentally.

**Methods and degrees.** — The training of a medieval student consisted not only in acquiring the subjects mentioned, but in learning to debate upon them. The acquisition of the subject-matter was accomplished through lectures, which consisted in reading and explaining the textbook under consideration (Fig. 13). Besides the text itself, the teacher would read all the explanatory notes, summaries, cross-references, and objections to the author's statements, which often quite overshadowed the original, and might even add a commentary of his own. The passage was read slowly and repeated whenever necessary. The whole exercise was carried on in Latin, which had to be learned by the student before coming to the university. The training in debate was furnished by means of formal disputations, in which one student, or group of students, was pitted against another (Fig. 12). In these contests, which also were conducted in Latin, not only were authorities cited, but the debaters might



FIG 12 The disputation



FIG 13 The Lecture  
The Medieval Universities

add arguments of their own. Thus, compared with the memorizing of lectures, debating afforded some acuteness and vigor of intellect, but by the close of the fifteenth century it had become no longer reputable. The aim came to be to win and to secure applause without regard to truth or consistency.

At the close of the course, the student was examined in his ability to define and dispute; and if he passed, he was admitted to the grade of master, doctor, or professor. These degrees seem originally to have been about on a par with each other, and signified that the candidate was now ready to practice the craft of teaching. The baccalaureate was at first not a real degree, but simply permission to become a candidate for the license to teach. During the thirteenth century, however, it came to be sought as an honor by many not intending to teach, and eventually became a separate degree.

**Value and influence of the university training.** — Obviously the medieval universities had most of the defects of their times. From a modern point of view, the content of their course of study was meager, fixed, and formal, and the methods of teaching were stereotyped and authoritative. They largely neglected the real literature of the classical age, and permitted but little that savored of investigation or thinking. Yet the universities were a product of the growing tendencies that later burst the fetters of medievalism. They were a great encouragement to subtlety, industry, and thoroughness, and their efforts toward philosophic speculation contained the germs of the modern spirit of inquiry and rationality. They were even of immediate assistance in promoting freedom of discussion and advancing democracy, and to their arbitration were often referred disputes between the civil and ecclesi-

astical powers. Thus they aided greatly in advancing the cause of individualism and carrying forward the torch of civilization and progress.

#### EDUCATION UNDER CHIVALRY

**Development of feudalism and chivalric education.** — The mediæval education thus far described has had to do mostly with the schooling of the ecclesiastical and other select professional classes. Quite a different type of training was that given the knight. This has generally been known as the education of chivalry. Chivalry is a name for the code of manners in usage during the days of the feudal system. By this system is meant an order of society and government that gradually grew up in the Middle Ages alongside the regular political organization, and when, under the successors of Charlemagne, the monarchy became weak, tended to be substituted for it.

Under feudalism small landowners and freemen lacking land had come to depend upon some powerful neighbor for protection, and even to seek from him a dependent tenure of land. Then, in time, the lords acquired a species of sovereignty over their tenants, and by the tenth century there had come to be a great social gulf between the nobility, who owned the land and lived in castles, and the peasantry, who tilled the soil and supported them. The only serious business of the former was fighting with spear, sword, or battle-ax, in their own quarrels or those of their feudal superiors. To prepare for this warfare, mock combats were occasionally engaged in as early as the tenth century (Figs. 14 and 15).

But by the middle of the twelfth century, when the old heroic age had lapsed into an age of courtesy, with extravagant devotion to women and romantic adventure as

its chief ideals, these encounters were organized into a definite species of pastime called "tournaments," and soon degenerated into mere pageantry. Hence the rules of chivalry were formal and ceremonious, and the art of horsemanship and the management of the lance and spear became set and fixed. The ideals of knightly conduct could then be stated as "service and obedience" to God, as represented by the organized church, to one's lord, or feudal superior, and to one's lady, whose favor the knight wore in battle or tournament.

**The three stages in chivalric education.** — The aim of chivalric education was, therefore, to train the boy in "religion, honor, and gallantry." To this end he was sent at seven or eight years of age to the castle of a nobleman, who was generally his father's feudal superior. He there passed through the three stages of page, squire, and knight. As "valet" or "page" he performed personal duties for his lord and lady, and his education was conducted mostly by the latter. He learned the game of chess, acquired the etiquette of love and honor, and was taught to play the harp and pipe and to sing, to read and write, and to compose in verse. Outside the castle, the pages were trained in running, wrestling, boxing, riding, and rudimentary tilting (Fig. 16).

At fourteen or fifteen the youth passed to the grade of "squire," and, while he still attended the lady and carved the meat or handed around the viands for the guests, his chief service was to the knight, and his training came through him. He slept near him at night, groomed his horses, kept his armor and weapons in condition, and attended him at the tournament or upon the battlefield. Through this service the squire himself was practiced in all the warlike arts. Toward the close of the period the



FIG 14 Preliminaries of a combat



FIG 15 Termination of a combat.



FIG. 16 Boys playing tournament with a "quintain," or dummy opponent

### The Education of Chivalry

Reproduced from Strutt, *Sports and Pastimes of England*

embryo knight also chose his lady-love, and learned to write verses and dance.

When the squire became twenty-one, he was knighted with many religious ceremonies. After a season of fasting, the candidate entered the church in full armor and spent the night in vigil and holy meditation. In the morning he confessed, had his sword blessed upon the altar by the priest, and took an oath to defend the church, protect women, and succor the poor. He then knelt before his lord, who laid his own sword-upon the candidate and dubbed him knight.

**The effects of chivalric education.** — This training of the knight in the "rudiments of love, war, and religion" apparently contained many anomalies and contradictions. Every virtue seems to have been balanced by a correlative vice. The knights were recklessly courageous in battle, but their anger was ungovernable and their cruelty extreme. A great self-respect was supposed to characterize the true knight, but this often reacted into an overweening pride. Likewise, while the knights were rated largely according to their liberality and hospitality, these virtues degenerated into a great love of display and extravagance beyond measure. Again, although great respect for womanhood was inculcated, not much consideration could be expected by women beneath a certain rank. Similarly, the knightly word of honor, if accompanied by certain forms, would be held sacred, but if these forms were omitted, a decided breach of faith was not uncommon.

As a whole, however, the chivalric training had a beneficial effect upon the society of the times. It helped to organize the turmoil and to refine the barbarism of medieval Europe, and was an effective instrument in



raising the position of women. Moreover, while this peculiar training was artificial and worldly, by that very tendency it did much to counteract the "otherworldly" ideal of monasticism and the general asceticism of the period. It encouraged an activity in earthly affairs and a frank enjoyment of this life, and thus helped to develop a striking characteristic of the Renaissance.

### LATER TYPES OF MEDIEVAL SCHOOLS

A most important influence in producing a transition from medieval to modern times is found in the increase of commerce and industry during the later Middle Ages. From the Roman days down, trade had never died out in Western Europe, especially Italy, despite the injuries wrought by barbarian invasions, as the nobles had always need of luxuries, and the Church of articles of utility in its services. But the demand for vessels and transports during the Crusades, and the desire for precious stones, silks, perfumes, drugs, spices, and porcelain from the Orient afterward, gave a special impulse to commercial and industrial activity.

The people of Europe now began to think of what articles others outside their own little groups might want in exchange for these luxuries, and to strive to produce such commodities. They also undertook themselves to make some of the new articles, such as light and gauzy cotton and linen fabrics, silks, velvets, and tapestries. Thus the means of communication between the European states was greatly facilitated, new commercial routes and new regions were opened, geographical knowledge was increased, navigation was developed, maritime and mercantile affairs were organized, manufactures and industries

were enlarged, currency was increased, and forms of credit were improved.

**The burgher class and the guilds.** — The most noteworthy consequence of this industrial and commercial awakening was the growth of towns and cities. There was little town life in Western Europe during the Middle Ages before the twelfth century, as the old Roman towns had, through the invasions of the Germans, largely disintegrated, and but few new organizations had sprung up in their place. While some towns still existed in Italy and southern France, most of the people of Europe lived in the country upon feudal estates. These little communities were largely isolated and independent of the rest of the world. They produced among themselves all that their members needed, and little or no money was necessary for their crude forms of exchange. But with the growth of commerce and population, these serfs began to find it more profitable to work in the towns and compensate the lord of the manor with money rather than work. The lords, in turn, found it of advantage to accept money in lieu of services, especially as many of them had been impoverished by the Crusades. Great bodies of serfs flocked to the towns, and new centers sprang up around the manorial estates and monasteries as manufactures, trades, and commerce increased.

Feudalism thus began to be threatened as early as the twelfth century, and within a hundred years the extinction of serfdom was assured. The people soon rebelled against the rule of their lords and either expelled them altogether or secured from them for a monetary consideration a charter conferring more liberal rights and privileges. By these charters, the lords agreed to recognize the guild of merchants and to permit the people to govern themselves.

Then, as industries, trade, and commerce continued to develop, the craftsmen and merchants grew rapidly in wealth and importance. They were soon enabled to rival the clergy in education, and the nobility in the luxury of their dwellings and living. They began to read, and books were written or adapted for their needs. The "burgher class" came to have a recognized position by the side of the clergy and nobility; and the king, in order to retain their support, was forced to take counsel with them. This development of industry and commerce, growth of town and city life, and rise of a "third estate" is one of the most noteworthy changes of the late Middle Ages.

**Informal training in the guilds.** — Such a new social attitude naturally gave rise to new forms of education. An informal type of training soon sprang up in connection with the development of "guilds." Besides the original guild of merchants, through which the town had presented a united front and gained its privileges, separate guilds for the various crafts had been established in each town. These craft guilds were the sole repositories of the traditional lore of the vocations, and became the chief channel for transmitting it. While their number and variety differed in each town, all the guilds sought to prevent anyone who had not been regularly approved and admitted to the corporation from practicing the trade he represented.

In consequence of this attempt at regulation, industrial training in the craft of each guild grew up through an apprenticeship system. This was provided upon a domestic basis. The "apprentice" entered the household of his "master," and learned the craft under his direction (Fig. 17). The time necessary for this varied greatly in different crafts. For example, in Paris it took two years

to learn to become a cook, eight years to become an embroiderer, and ten years to become a goldsmith. While the apprentice received no wages during this period, he was under the protection of the gild, and might appeal to the organization against ill-treatment or defective training.



FIG 17 Apprenticeship training in a gild The master bootmaker and his wife, two journeymen, and an apprentice

At the end of his apprenticeship, he became a "journeyman" and could earn wages, but only by working for a master, and not through direct service for the public. After an examination by the gild, which might include the presentation of a "masterpiece," or sample of his work, the journeyman eventually became a "master."

In other ways, the organization regulated and protected its craft. In order that journeymen and masters might

not become too numerous, all masters, save those on the governing board of the gild, were forbidden to take more than one apprentice. The methods of practicing each trade and the hours to be devoted to it each day were specified, and the handiwork of each man carefully scrutinized. In many instances, the gild put its own stamp upon good work and often seized products it considered to be defective. In this way there grew up a species of industrial education, with three definite stages in its organization and with inspection at every point.

**Gild schools.** — Before long, too, the gilds developed a more formal means of education. The existing ecclesiastical schools did not altogether meet the needs of the gilds, and they undertook the establishment of additional institutions for this purpose. Where the gilds had retained one or more priests to perform the necessary religious offices for their members, before long they also utilized these functionaries to keep a school for the benefit of their own and sometimes other children in the town. Later, endowments were furnished especially for a priest to teach school, or an amount sufficient for the purpose was paid out of the common funds of the gild. Some of these gild schools, like "Merchant Taylors'" of London, or the Grammar School at Stratford-on-Avon, where Shakespeare was educated (Fig. 18), still survive as secondary institutions. Many instances, too, are recorded where the members of a certain gild were appointed trustees of a school established by an individual, and were granted the right of appointing and dismissing the master, admitting the pupils, managing the property, and formulating statutes. In such fashion Collet later vested the management of the famous St. Paul's school (see p. 125 f.) in the gild of mercers.

**Burgher and chantry schools.** — As the gild organizations gradually merged with those of the towns, the gild schools were generally absorbed in the institutions known as "burgher" or town schools. At first these burgher schools were not very dissimilar to those established by



FIG. 18 Gild school and church at Stratford-on-Avon. In this, when it had become a "grammar school," Shakespeare learned "little Latin and less Greek."

the Church, except that they were more conveniently located, but later various types of vernacular schools arose to meet special practical demands, particularly writing and reckoning. The Latin burgher schools were also somewhat practical in their course, and often admitted some pupils who desired to learn only to read, write, and reckon. Writing had become an important vocation, since printing had not yet been invented; and there was a definite demand for writers in public offices, private secretaries, letter-writers for the illiterate, and teachers of writing. Reckoning grew directly out of the new commercial life,

and was often taught in the writing schools. It was not taught from the standpoint of theory or discipline, as was the arithmetic in the Latin schools, but for the sake of practical calculation and bookkeeping.

But even all the facilities of the regular Latin and vernacular schools of the town were not sufficient to meet the demand for a more practical education. In consequence, private "venture" schools, taught by wandering teachers or by women, likewise often sprang up, and some teachers were even licensed by the town authorities to teach the vernacular. In most instances, however, these institutions were also combined with the burgher schools.

Another type of institution that came into prominence toward the close of the Middle Ages was the "chantry school." Schools of this sort at first arose out of bequests by wealthy persons to support priests who should "chant" masses for the repose of their souls. Since these religious duties did not absorb all the time of the priests, they were able to do some teaching. And before long, the founders of chantries themselves came to direct that the priests carrying out their will should be required to teach. Often two chantry priests were provided, one to teach a "grammar" school, and the other a "song" or vernacular school. From the first, most of these chantry schools were free of all tuition charges, but occasionally they were gratuitous only to the children of parishioners or to poor children whose parents or guardians asked for the privilege.

**Influence of the new schools.** — The chantry schools likewise were often united with various other schools within a town, and became jointly known as "burgher schools." Many new foundations of a similar nature were also made. These burgher schools were largely controlled and supported by the public authorities, although still

generally taught by the priests. They came to represent the interests of the mercantile and industrial classes, and gave instruction in subjects of more practical value than had any of the schools hitherto.

Such institutions sprang up everywhere during the later Middle Ages. They were often strongly opposed by the ecclesiastical authorities, who struggled hard to abolish them or bring them under control, but they continued to grow and hold their own. The number of lay teachers in them gradually increased, and thus paved the way for the tendency toward the secularization and civic control of education that appeared later on. The new schools, therefore, that arose in connection with the development of commerce and industry and the growth of towns, were one of the largest factors that led into the broadening of outlook known as the Renaissance.

#### THE PASSING OF THE MIDDLE AGES

It can now be seen that a new spirit had been creeping into European civilization, and that the Middle Ages were passing. In order to bring the German barbarians up to the cultural level of the classical period, it was necessary for the Church to set up an authoritative standard and repress all variation. Yet such bondage of the human spirit was unnatural, and there were periodic tendencies to rebel against the system. In fact, medievalism contained within itself the germ of its own emancipation. During the eighth century a new political order came about that culminated in Charlemagne's revival of education, and, despite the later disruption of his empire and the consequent retrogression, by the thirteenth century a further awakening had appeared in a series of material and intellectual developments. The broadening of horizon through



contact with the Moors, the flowering of scholasticism, the evolution of universities, the worldly appeal of chivalry, and the growth of cities, guilds, and commerce were all helping by accumulation to dispel the medieval spirit.

### SUMMARY OF THE CHAPTER

During the Middle Ages the German hordes absorbed ancient civilization under the authoritative guidance of the Church, and the chief means of leavening the barbarian lump was found in the cathedral and monastic schools. Monasteries grew up to counteract the prevailing worldliness. To keep the monks busy, Benedict prescribed the copying of manuscripts, and this literary work rendered schools necessary. In these monastic schools were taught the "seven liberal arts" by catechetical methods. Thus monasticism helped preserve learning and education, although it was somewhat hostile to the classics and science.

Learning and schools had by the eighth century been sadly disrupted, and, to restore them, Charlemagne invited Alcuin of York to become his adviser in education. Alcuin induced Charlemagne to conduct higher education at the "palace school," and to improve the cathedral, monastic, and parish schools. Alcuin continued his influence even after he retired from the active direction of education, but he became set and narrow. A broader spirit, however, appeared in his pupils, and intellectual stagnation never again prevailed.

Moslemism amalgamated in Syria with Greek philosophy and science, and the Moslem cities there became renowned for their learning, but the Moslems who had absorbed the Hellenized philosophy were driven from the Orient into Spain, where they founded Moorish colleges. The Moslems thus stimulated learning in the Christian schools, and introduced Aristotle once more, but, after bringing learning back, Moslemism itself reverted to its primitive stage.

Scholasticism was a peculiar method of philosophic speculation in the later medieval period. At first scholastic philosophers held that faith must precede reason, but eventually reason itself tended to become the means of testing the truth. Scholastic education was organized in the monastic and episcopal schools, and consisted in the limited learning of the times, systematized on the basis of Aristotelian deduction.

Universities began to spring up toward the close of the Middle Ages. Through local conditions, a course in medicine arose at Salerno, in civil and canon law at Bologna, and in theology at Paris. Bologna became the pattern for numerous universities in the South, and Paris for many in the North. Popes and sovereigns granted privileges by charter to the various universities. The term "university" originally signified a "corporation" of students and teachers, and the students were usually grouped according to "nations." The teaching body was divided into four or five "faculties." The course in arts included the seven liberal arts and portions of Aristotle; in civil and canon law, the *Corpus Juris Civilis* of Justinian and the *Decree* of Gratian respectively, in medicine, the treatises of Greek and other medical writers, and in theology, mostly the *Sententiae* of Peter the Lombard. The texts were read and explained by the lecturers, and a practical training in debate was furnished.

Feudalism developed a code of manners known as "chivalry." Out of this there arose a training for knighthood in religion, honor, and gallantry. Before becoming a knight, the boy was early trained at home, then at some castle, first as "page," and later as "squire." This chivalric education produced many contradictory results, but it tended to counteract "other-worldliness."

In the later Middle Ages an influential "burgher class" arose, and there sprang up merchant and craft guilds, which afforded an industrial training through apprenticeship, and a more formal education through "guild schools." As the guilds merged with the town, these institutions became "burgher schools," and afforded a practical education in reading, writing, and reckoning. Various "chantry" and other schools were also absorbed by the burgher schools.

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## CHAPTER VII

### THE HUMANISTIC EDUCATION

**The Renaissance and the "revival of learning."** — By the fourteenth century a new dawn had appeared in civilization. The period that followed was marked by a general intellectual and cultural progress that began to free men from their bondage to ecclesiasticism and to induce them to look at the world about them. The adherence to an "otherworldly" ideal, the restriction of learning, the reception of the teachings of the Church without investigation, and the conformity of the individual were by this time rapidly disappearing. Such tendencies were clearly being replaced by a genuine joy in the life of this world, a broader field of knowledge and thought, a desire to reason and deal with all ideas more critically, and enlarged ideals of individualism. The days of mere absorption and assimilation had passed. This tremendous widening of horizon has been generally known as the *Renaissance* or "new birth." The term is used to indicate that the spirit of the Greco-Roman development had returned, and that opportunity for expression was granted to the individual once more.

But this period is also appropriately known as the "revival of learning." For, while the awakening preceded the recovery of classical literature and learning, intellectual freedom was very greatly heightened by this movement. After it was discovered that the writings of the ancient world were filled with a genuine vitality and virility, and

that the old authors had dealt with world problems in a profound and masterly fashion, and with far more vision than had ever been possible for the medievalists, there arose an eager desire and enthusiasm for the classics that went beyond all bounds. A knowledge of classical literature had never altogether disappeared, and various works had been preserved by the monks and others. To search out the manuscripts of the Latin and Greek writers, the monasteries, cathedrals, and castles were now ransacked from end to end. The manuscripts found were rapidly multiplied, and the greatest pains taken to secure the correct form of every passage. The devotees of the new movement were generally called "humanists," and the training embodying the classics has since been termed "humanistic education."

#### THE AWAKENING IN ITALY

**Study of the Latin and Greek classics.** — While the general tendency toward an awakening was apparent throughout Western Europe, it first became evident in Italy. This was due to the fact that Italy was at that time a seat of intellectual activity resulting from several factors. It was a storm center for civic and interstate quarrels, and, as a result of this political unrest, the citizens were kept constantly on the outlook for their own safety and interests, and their wits were greatly sharpened. Again, the commercial intercourse with other countries tended to open the minds of the Italians, break up their old conceptions, free them of prejudice, and increase their thirst for learning. Furthermore, the ghost of the classic ages still haunted its old home. A knowledge of the Latin tongue never ceased to exist in Italy, and many manuscripts of the Latin and Greek authors had been preserved.

There was needed only an awakening of the intellect sufficient to cast off its fetters, in order to bring back this spirit of the past into real pulsating life.

The awakening appeared first in the great humanist Petrarch (1304-1374). He seems to have embodied the very spirit of the Renaissance. He completely repudiated the "otherworldly" ideal of medievalism, and was keenly aware of the beauties and joys of this life. He did not hesitate to attack the most hoary of traditions, nor to rely upon observation, investigation, and reason. He likewise felt a kinship with the thinkers and writers of the classic age, and held that their works must be recovered before their spirit could be continued. In his enthusiasm for the Roman classics, he devoted himself during extensive travels to collecting manuscripts of the old Latin writers, which previously had been widely scattered, and endeavored to repair the ravages of time upon them. Petrarch also wrote a number of Latin works himself and endeavored to inspire everyone he met with a desire to gather and study the works of the classic authors. After he had been crowned poet laureate by the University of Rome in 1341, he spent most of his time spreading the humanistic spirit. Of the younger scholars and literary men influenced by him probably the most noted was Boccaccio (1313-1375). Through Petrarch this youthful poet developed a perfect passion for the ancient writers, and searched out, preserved, and copied as many manuscripts as possible.

With all this revival of Latin literature by the *coterie* of Petrarch, for some time there was little done with the Greek. That language had almost disappeared in Europe, and the greatest Greek authors were known only through Latin translations. But a knowledge of the Greek



language and literature still persisted in the Eastern empire, and the humanists of Italy were, through the works of the Latin authors, constantly directed back to the writings of the Greeks, and several of them began the study of Greek. But not until Manuel Chrysoloras (1350-1415) was induced in 1396 to settle in Italy and teach Greek, was any systematic training possible. During the next sixteen years this man of learning taught in the leading centers, established schools, made translations of Greek authors, and wrote a Greek grammar. From the efforts of Chrysoloras (Fig 19) sprang a number



FIG 19 Manuel Chrysoloras.  
An engraving by L'Armesia

of famous scholars, such as Vergerio, Niccoli, Bruni, and Guarino da Verona and his son. These men collected or copied hundreds of volumes, started libraries and schools, made excellent translations, and wrote treatises on humanistic education.

**The court schools and the universities.** — A powerful support for the work of these humanists resulted from the rivalry of the Italian cities. The princes at the head of these centers were often usurpers, and, to maintain their power, endeavored to make their cities illustrious by developing the humanistic movement at their courts. In some instances these rulers promoted the new learning informally, but often, where a scholar had been taken into the family of a prince as private tutor, children of the

neighboring aristocracy were associated and a regular school was started. "Court schools" of this sort soon existed at Florence, Milan, Venice, Padua, Pavia, Verona,

and other cities, but the best known of all was that organized by the scholarly Vittorino da Feltre (1378-1446) at Mantua.



FIG. 20 Vittorino da Feltre.  
A medal by Pisanello

Vittorino (Fig. 20) received into this school not only the scions of the leading Mantuan families, but, by special permission, promising boys of every degree. He dwelt with his pupils, and was most strict in his selection of masters and

of attendants, that the morals of his pupils might be of the highest. Likewise, "the father of his pupils," as Vittorino held himself to be, looked out for their food, clothing, and health, and shared in their games, interests, and pleasures. It was his intention to secure for his pupils that harmonious development of mind, body, and morals that the old Greeks had known as a "liberal education," but he emphasized the practical and social side of the individual's efficiency, and wished to prepare his pupils for a life of activity and service.

This he felt could be accomplished largely through a grammatical and literary study of the Greek and Roman writers. The pupils learned from the first to converse in Latin, and before they were ten, were also drilled in memorizing and reciting with intelligence the easier portions of the classic authors. As they advanced, they read a variety of Latin writers, and soon took up a study of the Greek authors and of the Church Fathers. Mathematical

subjects were also taught with an enlarged scope, especially in their applications to drawing, mensuration, and surveying. Likewise fencing, wrestling, dancing, ball-playing, running, leaping, and other physical exercises were taught for the purpose of stimulating mental powers.

The court school at Mantua was broadly typical of the court schools and of the humanistic education of Italy in general. These court schools, while taking pupils very early, often retained them until they were twenty-one, and covered as much, if not more, ground than the arts course of the university. They were, in a way, competitors of the older institutions. A student might, for the sake of a degree, go from a court school to a university, but, as a rule, if what he wished was a general course, he would be satisfied with the greater prestige that came from being a pupil of one of the distinguished humanists whom the court schools were generally able to retain at their head. In fact, the want of hospitality, if not actual hostility, of universities to the new learning, stimulated the growth of court schools, often by their very side. But gradually the humanistic training crept into the universities themselves. Before the close of the fifteenth century, Florence, Padua, Pavia, Milan, Ferrara, and Rome had adopted the humanities in the place of grammar, rhetoric, and dialectic as the material of a liberal education.

**Growth of "Ciceronianism."** — Unfortunately, however, this liberal education in the Italian schools and universities by the close of the fifteenth century began to be fixed and formal. Until the middle of the century the ideals, content, and meaning of this training were constantly expanding, but after that there was a gradual narrowing and hardening, and during the early years of the sixteenth century the degeneration became complete.

As the subject-matter became institutionalized, the literature of the Greeks and Romans came to be less and less interpreted in terms of life. Emphasis was placed upon the form rather than the content of the classical writings, and grammatical drill was more and more emphasized as a means of formal discipline. Before long the course was limited largely to Cicero, and the new learning fell into that decadent state known as "Ciceronianism." It consisted simply in an attempt to teach a perfect style with Cicero as a model, and to give one a conversational knowledge of Ciceronian Latin. The structure, metaphors, and vocabulary of all Latin writing had to be copied from the phrases of Cicero, and the literature of the day became little more than a sequence of model passages from that author.

#### HUMANISM IN THE NORTHERN COUNTRIES

**Social character in the North.**—(The humanistic training was not confined to Italy. By the middle of the fifteenth century with the invention of printing, the spirit of the Renaissance and the classic literature leaped the Alps and made its way into France, the Teutonic countries, England, and elsewhere. At first, humanistic scholars wandered into the North, soon others were invited in large numbers by patrons of learning, and, at length, students from the Northern countries thronged into Italy for instruction. But the character and effects of humanism in the North were somewhat different from those in Italy. The peoples of the North, especially those of Germanic stock, were by nature more religious, and with them the Renaissance led less to a desire for personal development, self-realization, and individual achievement, and took on more of a social and moral color. The prime

purpose of humanism became the improvement of society, morally and religiously, and the classical revival pointed the way to obtaining a new and more exalted meaning from the Scriptures. Through the revival of Greek, German and English scholars came to turn back to the essence of Christianity by studying the New Testament in the original. This suggested a similar insight into the Old Testament and a study of Hebrew, and a renewed study of the Bible became as important a feature of humanism as an appreciation of the classics.

**Humanism in the institutions of France.** — Northern humanism, however, appeared first in France. By 1458 a professorship of Greek had been established at the University of Paris. But the humanistic movement did not amount to much there until it was stimulated by the expeditions of Charles VIII (1494) and Louis XII (1498) into Italy, through which France came into direct contact with humanism at its sources. Even then, owing to the conservatism of the University, the new learning met at first with formidable opposition. Happily, it found an influential patron in the youthful Francis I (r 1515–1547). Under his protection, many prominent humanistic scholars and educators appeared, classical manuscripts were collected, Greek and Latin authors were translated, treatises on humanistic education were produced, and a new type of higher institution, the College of France, with chairs of Greek, Hebrew, and Latin, was established (1530).

Humanism was also introduced gradually into various colleges in Paris and Bordeaux by such scholars and practical teachers as Corderius (1479–1564) and Ramus (1515–1572). Many textbooks and editions of the classics were published, and soon most of the schools of France

responded to the new training. It would hardly be possible to consider many of them, but a brief description of the course and administration in vogue at the College of Guyenne, taken from an account of one of its teachers, may prove illuminating. This college contained ten classes in secondary work and two years more in philosophy, which partially overlapped the arts course in the university. Latin and religion were taught throughout the secondary school, and Greek, mathematics, rhetoric, and declamation could be taken in the last three or four classes. Probably the general conditions here were typical of the French humanistic schools everywhere during the sixteenth century.

**Humanism in the German universities.** — Before humanism was well established in France, however, it had also spread through the Teutonic countries. By the end of the sixteenth century the German universities had begun to adopt the new learning. In 1494 Erfurt established a professorship of Poetry and Eloquence, which covered the field of classic literature, and lectures on humanistic subjects were before long given in Leipzig, Heidelberg, Tübingen, Ingoldstadt, and Vienna. Likewise, a number of new universities, Wittenberg, Marburg, Königsberg, and Jena, were started upon a humanistic basis, and before the middle of the sixteenth century humanism prevailed in practically all of the German universities.

**The Hieronymians and their schools.** — The earliest factor in Germanic humanism, however, appeared in the education furnished by the Hieronymians, or Brethren of the Common Lot. For the instruction of the poor, this order had started schools throughout the Netherlands and Germany. At first, they stressed instruction in the Bible and the vernacular, but, as the Italian influence

began to be felt in the upper countries, they broadened the course by the addition of classic literature and Hebrew, and the schools soon became recognized centers of humanism. The pupils trained there strengthened the new learning as teachers in the universities and schools. Outstanding educators like Wessel (1420-1489), Agricola (1443-1485), Reuchlin (1455-1522), and Wimpfeling (1450-1528), lectured upon the classics and Hebrew, wrote textbooks upon grammar and treatises upon education, and held that all learning is vain which does not lead to the advancement of mankind.

Among these Hieronymian humanists no other had as great an influence as Desiderius Erasmus (1467-1531). While bitterly opposed to the corruption and obscurantism of ecclesiastics, he believed that the remedy lay, not in a division of the Church, but in the study of the classics and the Church Fathers, and in the general removal of ignorance. Accordingly, to advance education, Erasmus (Fig. 21) assisted in the preparation of Latin and Greek grammars, produced textbooks on Latin composition and conversation, wrote treatises on the New Testament and the Church Fathers, and composed satires in Latin to reform the abuses and foibles of his times. The most famous of his satires was the *Dialogue on Ciceronianism*, in which he ridiculed the narrower tendencies of humanism. He also made a direct contribution to educational theory in his Latin treatises



FIG. 21 Desiderius Erasmus  
Portrait by Holbein in the Louvre

on *The Liberal Education of Children*, *The Right Method of Study*, and *Courteous Manners in Boys*, which are almost modern in some of their recommendations.

The development of the "gymnasium." — It can be seen what a profound effect the humanists trained in Hieronymian schools had upon the Teutonic universities and other educational institutions. But there sprang up another type of school known as the *gymnasium*, which was an even more typical and lasting institutional development of the Northern Renaissance. Such institutions grew gradually out of the old cathedral and upper burgher schools. They seem to have received their first definite shaping from Melanchthon (1497–1560), who was requested by the Elector of Saxony in 1528 to organize "Latin schools" in his state. Melanchthon planned work in Latin and religion for each grade, but neither Greek nor Hebrew as yet appeared in the course.

While these Latin schools constituted an initial step, the fixing of the type and the first use of the term "gymnasium" are found in 1538 in the case of the classical school organized by Johann Sturm (1507–1589) at Strassburg. Here was worked out a course of ten classes, upon which the pupils entered at six or seven years of age. The aim of this training Sturm held to be "piety, knowledge, eloquence," meaning by the last an ability to speak and write Latin readily. For "piety," the catechism was studied in German for three years, and in Latin for three years longer. To secure "knowledge" and "eloquence," Latin grammar was begun immediately and the drill continued for four years, during which the pupil passed gradually from memorizing lists of words used in everyday life and reading dialogues that embodied them, to the translation of Cicero and the easier Latin poets. In the



fourth year exercises in style were begun, and this was accompanied by a grammatical and literary study of the Latin classics. Greek was started in the fifth year, and continued to the end of the course.

This training, like that of Italian humanism, eventually became set, formal, and mechanical. While other authors than Cicero were read, the object was to acquire an ability to read, write, and speak Ciceronian Latin, and words, phrases, and expressions were carefully memorized. The main emphasis throughout was upon form, with little regard for content, and the Latin and Greek were largely regarded as an end in themselves. Yet the gymnasium of Sturm was an enormous success, and was soon crowded with students. His pupils became the headmasters of the most prominent schools, and through his wide correspondence with sovereigns and educators, the course of study formulated by Sturm became a model not only for Germany, but, in a sense, for the rest of Europe.

Most of the existing secondary schools in Germany, and many founded later, became gymnasiums, with a formalized classical training. The majority of the Hieronymian schools soon adopted the gymnasial course. This was also the case with the *Furstenschulen*, or "princes' schools," a type of institution started in 1543 by Duke Moritz of Saxony to train officials for Church and State at public expense, which was afterward absorbed into the gymnasial system. And the gymnasiums have today changed but little from Sturm's organization. Owing to the later influence of realism, the addition of mathematics, modern languages, and the natural sciences has somewhat mitigated the amount of classics prescribed, but otherwise the German gymnasiums adhere to their formal humanism as tenaciously as in the sixteenth century.

## HUMANISM IN ENGLAND

**Development at the universities and the court.** — In its northward march the humanistic education also effected profound changes in England. By the middle of the



FIG. 22 Thomas Linacre

fifteenth century many former students of Oxford began to study at various humanistic centers in Italy. But the influence of such innovators was scarcely felt until William Grocyn and Thomas Linacre (Fig. 22), who had gone to Florence about 1488, undertook to introduce the study of Greek upon their return home. Grocyn (1442-1519) became the first lecturer on Greek at Oxford, but he was greatly as-

sisted in the humanistic training by Linacre (1460-1524), although the latter's lectureship was nominally on medicine. Among their pupils were Erasmus, More, and Colet.

Humanistic education did not reach Cambridge, however, until the close of the fifteenth century, but, with the progress of the sixteenth, that university rapidly overtook her sister institution. The real development began when Erasmus, while a professor of theology at Cambridge (1510-1514), consented also to lecture upon Greek as a labor of love. Erasmus was succeeded by a number of lecturers, and from 1540 on the new *regius* professorship was held for four years each by the great teachers Cheke (1514-1557) and Ascham (1515-1568). As Cheke became private tutor to Prince Edward and

Ascham to Princess Elizabeth, an Hellenic atmosphere was soon promoted in royal circles. A powerful assistance to the development of humanism was also found at the court through the influence of More, who was especially close to Cardinal Wolsey, and so for a time to the king, Henry VIII. A number of treatises upon humanistic education were written by members of the court, like More and Vives; while Ascham produced his *Scholemaster*, a well-known work on teaching Latin and Greek by "double translation." His plan was as follows:

The childe must take a paper booke, and sitting in some place, where no man shall prompe him, by him selfe, let him translate into Englishe his former lesson. Then shewing it to his master let the master take from him his latin books, and pausing an houre, at the least, then let the childe translate his own Englishe into latin agame, in an other paper booke. When the childe bringeth it, turned into latin, the master must compare it with Tullies (i.e. Cicero's) booke, and laie them both together

**Rise of the grammar schools.**—The humanistic changes in English education, however, were not limited to the universities and the court. The schools also felt the effect of the new movement, and the most important factor in bringing this about was the foundation of St. Paul's School in 1509 by Dean John Colet. This scholar devoted most of the fortune left him by his father to establishing a humanistic school in St. Paul's churchyard, dedicated to "the child Jesus." The institution was thus an outgrowth of Northern humanism, and combined religious training with a study of the classics. In connection with certain Latin authors and Church Fathers, the pupils studied the catechism in English, the *Latin Grammar* of Lily, who was the first headmaster of the school, and the *De Copia* of Erasmus.

St. Paul's School trained a long list of brilliant scholars, literary men, clergy, and statesmen, and became the immediate model for a host of other institutions. There were in existence at the time St. Paul's was founded some three hundred "grammar" schools of various types. These had come down from the Middle Ages, and their chief purpose had been the training of young men for the priesthood. Their curricula were usually of the medieval monastic type, but they soon felt the influence of the new school. Those which survived the general dissolution of ecclesiastical foundations by Henry VIII and Edward VI were gradually remodeled on the classical basis of St. Paul's. New schools were also established in accordance with these humanistic ideals.

**Decadence into formal humanism.** — But the humanism of the "grammar" schools in England, as in Italy and Germany, soon became narrow and formal. The purpose of humanistic education came to be not so much a real training in literature as a practical command of Latin and a means of communication in all lands and ages. Accordingly, the training became one of dictionaries, grammars, and phrase-books. Expressions and selections were culled from authors and treasured in note-books, and the methods became largely *memoriter* and passive. The formalism into which the schools of England had thus fallen by the seventeenth century is depicted in Brinsley's *Ludus Literarius; or the Grammar Schoole*, a work intended to ridicule and reform these conditions. It indicates that the training in Latin was devoted to drill in inflecting, parsing, and construing a fixed set of texts. Lily's *Grammar* was memorized by the pupils, with little understanding of the meaning, and all Latin conversation was based upon some phrase-book.

Although reforms have since been made in many of these directions, the organization and the formal humanism of the English "grammar" school have been preserved in principle even to this day. Mathematics, modern languages, and sciences have been added, and a "modern side" has been established as an alternate for the old course, but the classics are still the emphasized feature, and, to a large degree, drill methods prevail. The patronage of grammar schools comes largely from the aristocratic and upper middle groups of society. It was originally intended that, through generous endowment, they should be open to rich and poor alike, but, as a result of the great increase in necessary and unnecessary expenses, until recently there has not been much opportunity for anyone in the lower social classes to attend them.

Similarly, a distinction came to be drawn between the grammar and the so-called "public" schools, although it was not a very clear one. In general, an English public school has a more aristocratic and wealthier patronage. Nine "great public schools" were recognized by the Clarendon Commission in 1864 — Winchester (Fig. 23), Eton (Fig. 24), St. Paul's, Shrewsbury, Westminster, Rugby, Harrow, Merchant Taylors', and Charterhouse; but several other old schools and a number of the stronger foundations of Victoria's reign were eventually admitted. Later many others that would not have been considered eligible outside of the immediate locality, came to claim the dignity of being a "public school," and, as we shall see (Chapter XVIII), the name is now applied to about two hundred schools that have met definite standards.

**Grammar schools in the American colonies.** — It was after these "grammar" schools of the mother country that the first secondary schools in America were modeled and



FIG 23 Drawing of Winchester College and its masters and students by Warden Chandler of New College, Oxford, in 1460. The picture reveals the relationship of Winchester to the old monastic institutions, before it became humanistic, and shows a remnant of chivalry through the tournament going on in the courtyard.

named. In many instances the fathers of the colonies, such as Edward Hopkins, William Penn, and Roger Willams, had been educated in the grammar schools of England, and, as nearly as the different social conditions would permit, sought to model the institutions in their new

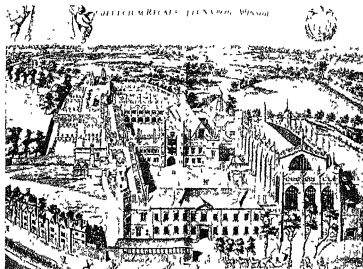


FIG 24. Eton College in 1688 from the drawing of David Loggan

home after them. The Boston Latin (Grammar) School was founded as early as 1635 (Fig 31), and other towns of Massachusetts — Charlestown, Ipswich, Salem, Dorchester, Newbury, Cambridge, and Roxbury — also, before long, established grammar schools. Similarly, towns of Connecticut, Rhode Island, New York, Pennsylvania, Virginia, and the other colonies had in many cases founded grammar schools before the close of the century. Moreover, the legislatures of Massachusetts (1647) and Connecticut (1650) soon ordered that a "grammar" school be

established in every town having one hundred families (see pp. 202 f. and 205).

The American grammar schools, like their prototypes, were secondary and sustained no real relation to the elementary schools. They were mostly intended to fit pupils for college, although sometimes the college had not yet been established, and thus furnish a preliminary step to preparation for the Christian ministry. Hence their course consisted chiefly in reading the classics and the New Testament, and used among its texts Lily's *Grammar* (see p. 125). Although the hold of formal humanism upon secondary education was somewhat relaxed during the subsequent stages of the "academy" and the "high school," this type of training was considered the only means of a liberal education until well into the nineteenth century.

### HUMANISTIC AIMS AND INSTITUTIONS

It can now be seen how far the ideals of humanism had departed from those of the medieval period. The "other-worldly" aim, the monastic isolation, and the scholastic discussions had given way to the interests of this life, personal and social development, and a study of the classics. In the North the movement took on rather a different color from that in the peninsula which gave it birth. While Northern humanism was narrower in not concerning itself so much with self-culture, personal expression, and the various opportunities of life, it had a wider vision through interesting itself in society as a whole and in endeavoring to advance morality and religion. It was democratic and social in its trend, where Italian humanism was more aristocratic and individual.



In Italy the chief educational institutions resulting from the humanistic movement were the schools that arose at the brilliant courts of the city tyrants. These institutions were sometimes connected with the universities, and gradually the universities themselves were forced to admit the new learning to the curriculum. In the North a number of new institutions — Hieronymian schools, gymnasiums, princes' schools, and grammar schools — were developed from humanism, and the existing institutions soon showed the influence of the movement, but all of them stressed moral and religious studies, as well as classical.

(Everywhere the curriculum of the humanistic foundations consisted mostly in the mastery of Latin and Greek, but in the North the renewal of Greek in the curriculum meant also a study of the New and Old Testaments and the Church Fathers. Where the Italian Renaissance re-created the liberal education of Plato and Aristotle, Cicero and Quintilian, the movement in its Northern spread found in the classical revival a means of moral and religious training.) But in both the South and the North the humanistic training became fixed and formal. Just as in Italy by the beginning of the sixteenth century it had degenerated into mere Ciceronianism, so in the North, after about a century of development, it began to grow narrow, hard, and fixed. (By the middle of the sixteenth century, the spirit of criticism, investigation, and intellectual activity had begun to abate, and by the opening of the seventeenth humanism had been completely formalized. In the study of the classics all emphasis was placed upon grammar, linguistics, and style, form was preferred to content; and methods became *memoriter* and imitative. Humanism had largely performed its mission,

and a new awakening was now needed to vivify education and society in general.

### SUMMARY OF THE CHAPTER

By the fourteenth century there appeared an intellectual awakening, known as the *Renaissance*. It was accompanied by a "revival of learning" and an education called "humanistic."

Italy first showed evidence of the new movement. The characteristics of the Renaissance were embodied in Petrarch and Boccaccio, but little was done with the Greek classics until Chrysoloras came from Constantinople. The tyrants of various cities often had humanistic schools started at their courts. Of these the most typical was that under Vittorino da Feltre. These schools eventually forced the universities to admit the humanities to their course. But humanism degenerated into "Ciceronianism."

Humanistic education also gradually spread to the countries north of Italy, but it there took on more of a moral color. In France, the protection of Francis I encouraged the introduction of humanism into educational institutions by various scholars. The German universities likewise began to respond to humanistic influences. The Hieronymians first introduced the classics into the schools, and Erasmus, who was trained by them, became the leader in humanistic education. Through other humanistic schools started by Sturm and others, the "gymnasium," the typical classical school of Germany, was evolved, and the humanistic education became fixed and formal. In England the movement gradually developed at Oxford and Cambridge, and Colet started St Paul's School, which became the model for all secondary schools. Humanism in England, however, soon retrograded into formalism, and the "grammar" and "public" schools there are little changed today.

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## CHAPTER VIII

### EDUCATION DURING THE REFORMATION

**Relation of Reformation to Renaissance.** — (The series of revolts from the Roman Catholic Church, generally known collectively as the "Reformation," may be regarded as closely connected with the Renaissance.) As shown in the last chapter, humanism in the North led to a renewed study of the Scriptures and a reform of ecclesiastical doctrines and abuses, and took on a moral and religious color. Reformers like Erasmus arose, who, while remaining within the Church, sought to purify it of corruption and obscurantism.

But the Church at first resisted all efforts at internal reform. Its immense wealth, large numbers, and training enabled it for a long time to thwart the spirit of the age, and a condition of ecclesiastical upheaval followed. Revolts against papal authority ensued in various parts of Europe north of Italy, and were furnished support by the awakened intellectual and social conditions of the sixteenth century. The result was the establishment of a church, or rather a number of churches, outside of Catholic Christianity. While each revolt had some peculiarities of its own, there were underlying them all certain general causes that indicated their relation to the Renaissance.

#### EDUCATIONAL ACTIVITIES OF THE PROTESTANTS

**The revolt and writings of Luther.** — (The attitude of the arch-reformer, Martin Luther (1483-1546), for ex-

ample, seems to have been largely bound up with the tendencies of the day. Apparently he had at first no idea of breaking from the Church, and supposed that the ninety-five theses he nailed to the church door at Wittenberg (1517) were quite consistent with Catholic allegiance. Even before this he had attacked Aristotle and scholasticism with great vigor, appealing to primitive Christianity and the right of free thought, and thus identified himself in spirit with the Northern Renaissance. And two years later, in his contest with Eck, when he was actually led to deny the authority of both pope and council, he was evidently relying upon the humanistic and individualistic atmosphere of the times.

And when he had once revolted, Luther gave much of his time to promoting the reform and education of the masses by writing. All his works, whether religious or pedagogical, were clearly intended, in a broad sense, to be educational.) After his condemnation by the Diet of Worms (1521), when he had taken refuge at the Wartburg, he undertook to awaken the minds and hearts of the common people by a translation of the Greek Testament. Contrary to general opinion, a large number of translations had preceded that of Luther, and their popularity must have proved suggestive to him, but his edition was unusually close to the colloquial language of the times. A dozen years later he had completed a translation of the entire Bible, which contributed greatly to education by getting the masses to read and reflect. For the further instruction of the people, he also followed the fashion of the day in producing two catechisms, one for adults and the other for children, together with many tracts, addresses, and letters, filled with allusions to the organization and methods of education.

**Luther's educational positions.** — But the documents which most fully reveal his educational positions are his *Letter to the Mayors and Aldermen of All Cities of Germany in behalf of Christian Schools* (1524), and his *Sermon on the Duty of Sending Children to School* (1530). The purpose of education, Luther everywhere holds, should include the promotion of the State's welfare quite as much as that of the Church. The schools were to make good citizens as well as religious men. In his *Letter* he declares :

The highest welfare, safety, and power of a city consist in able, learned, wise, upright, and cultivated citizens who can secure, preserve, and utilize every treasure and advantage . . . . Though there were no soul, nor heaven, nor hell, but only the civil government, would not this require good schools and learned men more than do our spiritual interests? . . . For establishment of the best schools everywhere, both for boys and girls, it is a sufficient consideration that society, for the maintenance of civil order and the proper regulation of the household, needs accomplished and well-trained men and women

Educational institutions should, on that account, be maintained at public expense for everyone — rich and poor, high and low, boys and girls alike, and attendance should be compelled by the civic authorities. Realizing that some pupils may find it hard to get the necessary time for school, Luther planned that "they should spend an hour or two a day in school, and the rest of the time in work at home, learn some trade and do whatever is desired, so that study and work may go on together." But he also urged a more academic course "for the brightest pupils, who give promise of becoming accomplished teachers, preachers, and workers."

[In all cases Luther naturally believed that the chief studies should be the Bible and the catechism. As a Northern humanist, however, he recommended the ancient

languages — Latin, Greek, and Hebrew — for the light they would throw on the Scriptures and the patristic writers. He likewise approved of rhetoric and dialectic, which were very valuable subjects in those days of controversy; and he made a decided advance in advocating history, natural science, vocal and instrumental music, and gymnastic exercises. History was advised, not only, as was common with the humanists, for the sake of illustrating moral truth, but also for the purpose of understanding social institutions. The study of nature was intended to reveal "the wonders of Divine Goodness and the omnipotence of God." Gymnastics he considered of value both for the body and the soul, and music a means of "driving away all care and melancholy from the heart."

The methods he recommended were equally rational. He would utilize the natural activity of children and not attempt to repress them, and would make use of concrete examples wherever possible. Languages he would teach less by grammar than by practice. His belief in the importance of selecting the proper content and method in education led him to rate the function of the teacher as higher, if anything, than that of the preacher.

**Work of Melanchthon and Bugenhagen.** — These recommendations of Luther were largely embodied in actual institutions by his associates. The year after his *Letter to the Mayors* was published, the Protestants were requested by the Count of Mansfeld to establish in Luther's native town, Eisleben, a school that would put his educational theories into practice, and this was carried out by Melanchthon. The subsequent organization of Latin schools throughout the Electorate of Saxony, and the foundation of the gymnasium of Sturm at Strassburg upon the Protestant basis have already been touched upon.



But of fully as much importance were the educational foundations made by Bugenhagen (1485-1558). While engaged in reorganizing the churches in the cities and states of Northern Germany, by his general "church orders" to each, Bugenhagen made ample provision for schools of the Lutheran type. For instance, at Hamburg in 1520 he organized a single Latin school with a rector and seven teachers, together with a German school for boys and one for girls in every parish. Eight years afterward, the "church orders" of Brunswick provided two classical schools, two vernacular schools for boys, and four for girls, so located in the city that all children could conveniently reach a school. Within a half-dozen years he made similar requirements for Lubeck, Minden, Göttingen, Sost, Bremen, Osnabruck, and other cities, and throughout some entire states of Germany, such as Holstem and his own native duchy of Pomerania.

**The revolt and educational work of Zwingli and Calvin.**—The revolt under Zwingli (1484-1531) was even more directly the outcome of Northern humanism than was that of Luther. Largely through Erasmus, Zwingli had come to believe that there was little basis in the Bible for the traditional theology, and he carefully read the accounts himself in the original Greek and Hebrew.) After he took charge of the cathedral at Zurich, he began his attack upon the dogmas and traditions of the Church, and, by securing the support of the town, managed in a fairly peaceful way to drop one form of the Church after another, until within five years he had abolished even the mass.

(Zwingli made the extension of educational facilities a part of his reform. He founded a number of humanistic institutions, and introduced elementary schools into Switzerland. He likewise published a *Brief Treatise on*

*the Christian Education of Youth* (1523), which recommended a course of studies not unlike that of Luther, except that, from his practical temperament, he did not include history, and added arithmetic and surveying.

While endeavoring to spread his reforms, Zwingli was slain in the prime of life. His positions were maintained by his successor in the cathedral, but the work was soon overshadowed and merged in the movement of Calvin (1509-1564). Calvin's break with the Church, like that of the French Protestants generally, also began through the influence of Northern humanism and the study of the Greek Testament. He had, moreover, received an excellent legal and theological education, and did not content himself with merely attacking Catholic doctrine, but was the first Protestant to formulate an elaborate system of theology.

**The influence of Calvin.** — The call of Calvin to reorganize the civil and religious administration of the city of Geneva gave him an excellent opportunity for working out his theories. Although he was much engrossed in religious disputes, he established "colleges" at Geneva and elsewhere, and in other ways undertook to found schools and promote education. He succeeded, too, in persuading his former teacher, Corderius, to come to Switzerland, and to organize, administer, and teach in the reformed colleges. Here this schoolmaster wrote four books of *Colloquies*, with the purpose of training boys, by means of conversation on timely topics, to speak Latin with facility, and from this work we can learn much of the character of the Calvinistic colleges.

Clearly the ideal in these colleges was the "learned piety" of Melancthon, Sturm, and the other Northern humanists and Protestants. An attempt seems to have

been made to teach Latin in such a way as to cultivate a moral and religious life, and psalms were sung, public prayers offered, and selections from the Bible repeated each day. We also know that in the seven classes of a college at Geneva the pupils learned reading and grammar from the Latin catechism, and then studied Vergil, Cicero, Ovid, Caesar, Livy, and Latin composition. Greek seems to have been begun in the fourth year, and, besides classical Greek authors, the Gospels and Epistles were read. Likewise, as in the other Reformation schools, logic and rhetoric were studied in the higher classes.

The colleges of this type not only spread rapidly among Calvin's co-religionists in Switzerland and France, but had a large influence upon education in many countries. As Geneva became a city of refuge for all the oppressed, a regard for humanistic, religious, and universal education was absorbed by the persecuted Netherlanders, the English Protestants of Mary's time, and the Scotch under the leadership of Knox in the days of Mary, Queen of Scots (1505-1572).

**Henry VIII's revolt and its effect upon education.** — In England a revolt from the Church likewise occurred. This also may have been due in part to the investigative spirit of Northern humanism, but the immediate cause of the breach was the desire of Henry VIII (*r.* 1509-1547) to control the national Church, that he might divorce his wife, and there was at first little change in doctrine. Once in ecclesiastical power, Henry began in 1536 to confiscate the monastic lands and property, and thus enlarged the scope of his operations until he had suppressed a large number of monastic, cathedral, collegiate, hospital, and other schools.

During the reign (1547-1553) of his successor, Edward VI, the acts of suppression were extended to chantry and

gild foundations, and it is estimated that, of the three hundred grammar schools that had come down in England from the Middle Ages, there were few that were not destroyed under Henry and Edward. Some, however, remained by the terms of the parliamentary acts of suppression, and popular sentiment caused others to be refounded. And during the reign of Elizabeth (1558-1603) and of the first two Stuart kings (1603-1649) these foundations were greatly increased out of royal funds or through the philanthropy of wealthy men. All of these schools, as we have seen (p. 126), following the example of St. Paul's, adopted the Northern ideals of humanism and furnished a curriculum of classics and religious training. The latter became based, of course, upon the teachings of the Church of England.

#### DEVELOPMENTS IN CATHOLIC EDUCATION

**Organization of the Society of Jesus.** — We may now turn back to the Mother Church and see what efforts she was putting forth in behalf of education during the period of Protestant revolts. Both before and after the time of Luther, there were reformers inside the Church who wished to improve its practices without changing its administration, but the Catholics in general felt it their chief duty to crush the Protestant heresy and recover the ground they had lost. This resulted in a number of religious wars, in which both sides displayed great bitterness and cruelty. But a more effective and constructive instrument in advancing the interests of Catholicism was the organization of the "Society of Jesus."

This order was founded by Ignatius of Loyola (1491-1556) in 1534, and six years later was recognized by the pope. The Jesuits always strove first through missionary

labors to extend Catholic Christianity throughout the world, and then by means of schools to hold their converts and educate all peoples to papal allegiance. The organization of the Jesuits was outlined in their *Constitution*. This fundamental document of the order received its final revision shortly after Loyola's death, but the *Ratio Studiorum* ("Order of Studies") which was an expansion of Part IV of the *Constitution* and described the educational administration in detail, was not finally formulated until 1599. It thus summed up the experience of the Jesuit schools during nearly sixty years.

The administration of the Society has always been of the military type. Loyola had originally started upon the career of a soldier, and did not believe that any system could be effective unless it were based upon implicit obedience to one's official superiors. At the head of the order is a "general," who is appointed for life and has vast administrative powers. As the society spread, the countries that came under its control were divided into provinces, and at the head of the Jesuit interests in each of these districts is a "provincial," appointed by the general for six years. In each province there are various colleges, whose presiding officer, or "rector," is chosen for six years by the general, but is directly responsible to the provincial and reports to him. Similarly, within each college are "prefects," immediately subordinate to the rector, but selected by the provincial, and under the inspection of the prefects are the "professors" or "preceptors."

**Jesuit course of study.** — The Jesuits never engaged in elementary education, but required that pupils know how to read and write before being admitted to any of their schools. This may have been brought about in the first

place by the fact that the number of their teachers was limited, or that the public elementary school was just coming to be regarded as of importance, and secondary education of the humanistic type was everywhere dominant. The Jesuit educational organization, therefore,

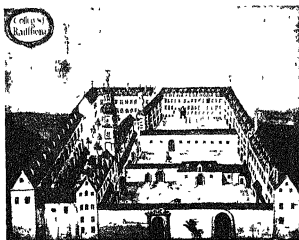


FIG 25 Jesuit College at Regensburg in 1600

consisted of "lower colleges" with a gymnasial course, and of "upper colleges," which were of university grade (Fig. 25).

Boys were admitted to the lower colleges at from ten to fourteen years of age and spent five or six years there. The first three classes were at first devoted to a careful study of Latin grammar and a little of Greek; in the fourth year a number of the Greek and Latin poets and historians were read; while the last class, to which two years were usually given, took up a rhetorical study of the classical authors. Only slight variations in the curriculum were ever allowed after the *Ratio Studiorum* was issued, until

the revision in 1832. In that year work in mathematics, natural science, history, and geography was added in the lower colleges, but the classics still composed the body of the course. Further modifications have since been made from time to time, with a view to modernizing the course, but the Jesuit colleges remain strongly classical.

The full course of the upper colleges lasted seven or nine years — the first three in “philosophy,” followed by four or six in theology. The training in “philosophy” included not only logic, metaphysics, psychology, ethics, and natural theology, but also work in algebra, geometry, trigonometry, analytics, calculus, and mechanics, and such natural sciences as physics, chemistry, geology, astronomy, and physiology. A successful completion of the course led to the degree of Master of Arts. After the course in philosophy, most of the Jesuits taught in the lower colleges five or six years before going on with the work in theology.

In the theological course four years were devoted to a study of the Scriptures, Hebrew, and other Oriental languages, together with Church history, canon law, and various branches of theology. After this one might elect a further training of two years, to review the work in philosophy and theology and to prepare a thesis. After a public examination and defense of his thesis, the successful candidate was awarded the degree of Doctor of Divinity. Hence a complete Jesuit training took from eighteen to twenty years, and a member of the order might be from thirty to thirty-five years of age before completing his formal education.

**Jesuit methods of teaching.** — The methods of teaching and the splendid qualification of the instructors were, from the first, distinctive features in the Jesuit colleges, espe-

cially when one considers how little attention up to their time had been given to the preparation of teachers. No one could teach in the lower colleges who had not passed through the course in philosophy, while professors in the universities had first to complete the theological course. Instruction was generally imparted orally, and then memorized or taken down in lecture notes. The general method used was the "prelection," which meant a preliminary explanation of the passage or lectures upon the topic under consideration by the teacher. It consisted in giving, first, the general meaning of the whole passage or proposition; then, a more detailed explanation of the construction or phraseology; next, similar thoughts in other authors; fourthly, "erudition," or informational comment upon the passage; then, a study of the rhetorical figures; and finally, the moral lesson to be drawn.

Obviously, with such a method, great stress would be placed upon memorizing, especially in the lower colleges. To fix subjects firmly in mind, short hours, few studies, and brief lessons were early found to be necessary. Likewise, reviews have always been frequent and systematic, and the Latin motto of the Jesuit method declares that "repetition is the mother of learning." Each day began with a review of the preceding day's work, and closed with a review of the work just accomplished. Each week ended with a repetition of all that had been covered in that time, and the last month of every year reviewed the course of the year. To maintain interest in the midst of so much memorizing and reviewing, many devices to promote emulation were used. The pupils were often arranged in pairs as "rivals," whose business it was to check on the conduct and studies of each other (Fig. 26),



and public "disputations" between two sides were engaged in each week.

The Jesuit system, then, seems to have been in advance of that in the schools at the time of its foundation. It was organized upon a systematic and thorough basis, and was administered by a set of splendidly trained teachers

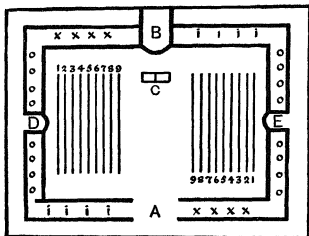


FIG 26 Plan of a Jesuit schoolroom of the seventeenth century B represents the teacher, C the monitors, and D, E, O, X, and I various student officials The numbered lines represent rows of students, known as *decuriae* When a student was called upon, his "rival" arose from the corresponding place in the other group, and, as each recited, the other endeavored to correct him in some error

through the best methods that were known in that day. The schools were interesting and pleasant, and were free to all who had the ability and desire to attend. The Jesuit teachers, too, were indefatigable and devoted to their duty. The criticism that has been offered to this educational system is based on its insistence upon absolute authority and the consequent opposition to the development of individuality. The Jesuit courses, subjects, and

methods became somewhat uniform and fixed. In the lower colleges they depended largely upon memory and an appeal to interest through a system of rivalry, honors, and rewards. Such a system is likely to tend toward a reproductive attitude in the pupil.

**Effects of the Jesuit education.** — Nevertheless, the Jesuits furnished the most effective education during the latter half of the sixteenth, the entire seventeenth, and the early part of the eighteenth centuries. The growth of their schools was phenomenal. At the death of Loyola (1556) there were already one hundred colleges, and a century and a half later they had increased to seven hundred and sixty-nine institutions, spread throughout the world. The average number of students in attendance at any of these colleges during the seventeenth century was about three hundred, and in several of the larger centers there were between one and two thousand. The famous College of Clermont (now *Lycée Louis le Grand*) at Paris is said to have run up to three thousand. At a modest estimate, there must have been some two hundred thousand students in the Jesuit colleges when they were at their height. Their graduates seem to have become prominent in every important activity of life, and included a large number of the noted authors, prelates, statesmen, and generals of the time.

By the middle of the eighteenth century, however, the ideals and content of education had somewhat changed, and the Jesuits did not adapt their course to the new conditions. Moreover, the Jesuits seem to have become powerful, ambitious, and somewhat arrogant. They quarreled frequently with bishops, other monastic orders, governments, and universities. Finally, after they had been banished from France, Spain, and Portugal, in 1773

the pope himself dissolved the Society of Jesus. Forty years later the order was restored, but, owing to the development of educational ideals and organizations and the increase of educational institutions, their work in Europe has never since become relatively as effective or held as important a place in education. In the United States, where a hundred or more Jesuit colleges have sprung up and in the lower work tended to adapt themselves to the modern requirements of American education, the influence of Jesuit education is still strong.

**La Salle and organization of the Christian Brothers.** — In general, the Catholic Church during this period was engrossed with secondary and higher education, and gave little heed to the training of all the people in the rudiments. In fact, until toward the close of the seventeenth century, the Catholics did not succeed in inaugurating any effective or widespread movement toward elementary education. Numerous previous attempts were made through catechism schools and various reformers and religious orders, but teachers were scarce and often ignorant and poorly trained, and there was little progress before the organization of the Brothers of the Christian Schools through the self-sacrificing efforts of Jean Baptiste de la Salle (1651-1719).

This organization sprang out of a group of five masters engaged in teaching schools for the poor in the city of Rheims in 1679, but it was not until three years later that La Salle completed his regulations, founded the brotherhood, and moved the members into a permanent home. The order flourished, and neighboring towns soon endeavored to secure its members as teachers in their schools for the poor. Within a year or two, four schools in and about Rheims were placed under masters trained in the

house of the Christian Brothers, and a number of other institutions were soon organized in the vicinity upon the same basis. But, being unable to supply the constant demands for his teachers that came from districts outside the towns, La Salle undertook to train boys who were sent him by the rural clergy and were expected to return to their homes to teach after their training. To accomplish this, he established in 1684 a "seminary for schoolmasters" in a wing of the house of the brotherhood, and two other seminaries were opened in neighboring towns the following year. Four years later La Salle opened a house for the brotherhood near Paris, and the Christian Brothers were speedily requested to take charge of the schools of several parishes.

**Scope and plan of the Christian Brothers' schools.** — Despite the jealousy and opposition of the established order of schoolmasters and of many parties in Church and State, the schools and seminaries of the Brothers greatly increased in Paris, and were rapidly extended throughout France. At Paris also La Salle started the "Christian academy," in which drawing, geometry, and architecture were taught ambitious poor boys on Sunday, and introduced boarding colleges for higher secondary training. These institutions likewise spread through France and the rest of Europe (Fig. 27). In 1705 La Salle retired to the estate known as Saint Yon, near Rouen, and there opened a home for the brotherhood. Here he also founded a famous boarding-school in which he trained boys for soldiery, farming, trade, and various other vocations. Before long he likewise organized in conjunction with it an industrial training for youthful delinquents, and both the vocational school and the "protectory" soon became models for many similar institutions in France and elsewhere.

The plan of the schools of the Christian Brothers was eventually worked out and crystallized in a fixed system under the title of *Conduct of Schools*. This code has not remained quite as definite and uniform as the *Ratio Studiorum* of the Jesuits, for changes and revisions are permitted and modern methods and subjects have from



FIG 27 A school of the Christian Brothers Visit of James II and the Archbishop of Paris to the school at Rouen

time to time been introduced. Considerable latitude, moreover, has been allowed to the individual houses by the Superior General at the head of the order, and by the Brothers Visitors, who have charge of the districts. The educational aim of the order has been pre-eminently religious, and the chief means of attaining this have been strict vigilance, good example, and catechetical instruction.

The course in the Christian Brothers' schools has included the studies of the best institutions of the time, and has added many more practical subjects. Besides the rudiments — reading, writing, and arithmetic — and religious instruction and good manners, mathematics, history, botany, geography, drawing, architecture, hydrography, navigation, and other technical subjects have often been taught, and in the industrial schools a manual and vocational training has been furnished.

**Methods and success of the Christian Brothers.** — La Salle seems to have made a great advance, too, in educational economy by perfecting and applying the "simultaneous" method, which had been practiced in a crude form by some of his forerunners. This method signifies grading the children according to their capacity, and having those in each grade use the same book and follow the same lesson under a single master, instead of instructing each pupil individually, as was customary at the time. Likewise, the seminaries or training schools of the Christian Brothers contributed much to the advancement of efficiency in teaching. For the first time teachers of ability and training were made possible for the elementary schools.

The work of the Christian Brothers has met with steady growth and development. By the time of La Salle's death (1719), there had come to be twenty-seven houses of the order, with two hundred and seventy-four brothers, educating about nine thousand pupils. Before the close of the century these numbers had about quadrupled, and now they have increased nearly a hundredfold since the founder's day. During the nineteenth century these institutions were established in all the states of Europe, Asia, Northern Africa, and America. The educational

foundations have been much modified and expanded, and now include colleges, technical and industrial schools, academies and high schools, elementary and grammar schools, commercial schools, asylums, and protectories. Thus La Salle and his schools of the Christian Brothers have performed a great service for education in all lines, but especially in the promotion and enrichment of elementary training, which had previously been so neglected.

#### EFFECTS OF THE REFORMATION UPON EDUCATION

**Changes in aim and content.** — It can now be seen that, as a result of the Reformation, the religious and theological aim of education at all stages became very prominent with Catholics and Protestants alike. In the elementary schools, besides the rudiments, the Scriptures, the Lord's Prayer, the Ten Commandments, and the Catholic, Lutheran, Calvinist, or Anglican creed and catechism were taught, and, with the Protestants, also hymns of the Church. The courses in the secondary schools and universities contained large religious elements, as well as the formal humanism into which the Renaissance of the North had degenerated. Likewise, there was furnished in all universities a training in dialectic, rhetoric, and theology for the sake of efficient controversy with ecclesiastical opponents.

**Development of public support for elementary schools.** — But while the Catholics were inclined to leave the organization of education in the hands of various religious bodies, the Protestants more often thought it wise to have its support and control administered by the princes and the state. Owing to this secular management and their position on universal education, the Protestants, with the exception of the Anglicans, who had altered but little in

doctrine, were inclined to establish state school systems and hold to the duty of providing and requiring elementary education at public expense. In this way the germs of the modern tendency toward universal, free, and compulsory education began to appear, although they did not ripen until much later.

In the German states there were many illustrations of the spread of elementary schools and civic control of education. As a result of Luther's *Letter to the Mayors* in 1524, the city of Magdeburg united its parish schools under one management and adopted the Protestant ideals. So, in 1525 the school at Eisleben, organized upon a Protestant basis (see p. 138), included elementary as well as secondary work. Similar ideals and organization appear in the provision for "German" schools in the "church orders" sent out by Bugenhagen (see p. 139) to the Protestant cities and states of Northern Germany.

A further step was taken in 1528 when Melancthon drew up a plan for schools throughout the entire Electorate of Saxony. This, the first state school system in history, was followed by one in Wurttemberg, where in 1559 Duke Christopher adopted an improvement upon the Saxon plan, which called for a religious and elementary training for the children of the common people in every village of the duchy. Brunswick in 1569, and Saxony in 1580, followed the lead of Wurttemberg in revising their school systems. Before the middle of the next century, a number of other states of Germany, such as Weimar, Hesse-Darmstadt, Mecklenburg, Holstein, Hesse-Cassel, and Gotha modeled elementary school systems after those of Saxony and Wurttemberg. While the Catholics did not in general maintain public elementary education, the Christian Brothers and others undertook a great work in this



line, and Duke Albrecht V of Bavaria even ordered throughout his state the establishment of "German" schools with instruction in reading, writing, and the Catholic creed.

This organization of universal education continued its advance, despite the decimation and the general havoc upon finance and education wrought by the Thirty Years'



FIG 28 A Protestant school in a German village of the sixteenth century  
Visit of the school committee and catechising by the pastor

War (1618-1648), and by the end of the eighteenth century practically every village throughout the German states had its *Volksschule* or "people's school." These institutions were under the direction of the pastor of each parish, and while actual conditions may often have been somewhat below the statutory level and in many cases were a wretched apology, every child not studying at a secondary school was in theory obliged, between the ages

of six and thirteen, to attend one of these schools of the people (Fig. 28).

As a result of the Dutch Reformed movement, Holland also made early provision for instruction in religion, reading, and writing. The Church at various synods, and civic authorities in many statutes, recognized the need of universal training, and finally the great Synod of Dort, by a combination with the civil government, in 1618 required every parish to furnish elementary education for all.

Similarly, through Knox, Scotland established elementary schools under the control of the parishes. Preliminary steps in this direction were taken by the Privy Council and the Scotch Parliament early in the seventeenth century, and in 1646 the parliament further enacted that there be "a Schoole founded, and a Schoole master appointed in every Parish," and provided that if a parish should fail in this duty, the presbytery should have power to establish the school and compel the parish to maintain it. Half a century later this school system was given over more fully to the control of the State, but even then much of the old connection with the Church was apparent. These schools gave instruction in reading, writing, and religion, with the Bible as text, and did a wonderful work in raising the level of intelligence and affording an opportunity to the children of the lower classes in Scotland.

England herself continued to hold to aristocratic and "selective" education, and gave little heed to the establishment of elementary schools, but the American colonies, as far as they were founded by Calvinists or Lutherans, provided early for elementary education (see pp. 193 f.). The Puritan towns of the Massachusetts

colony established schools almost as soon as they were settled, and in 1647 the legislature enacted that all towns with fifty families should provide an elementary school. Connecticut adopted the same plan three years later, and before the close of the century, similar action was taken by New Hampshire and Vermont (see pp 194 and 205). Likewise, New Amsterdam and the villages of New Netherlands followed the example of the mother country and provided public schools in connection with each church through the support of the Dutch West India Company or of the civil and ecclesiastical bodies jointly (see pp. 198 f ).

**Influence upon secondary schools and universities. —** While the development of elementary instruction and of state systems of education was the most important educational outcome of the Reformation, the movement had a somewhat similar effect upon the humanistic secondary education of the time. In Protestant Germany the Latin schools and gymnasiums came under the control of the princes and the State rather than the Church, and gradually became the backbone of the state school systems. But they stressed the religious element in their curriculum, and the direct management of education was simply transferred to Protestant ministers or leaders. The schools were still taught and inspected by representatives of the Church, but the form of organization and administration of education was radically changed.

In England there was a similar transfer of management to the Protestant clergy. The existence of the schools had to be authorized and their teachers licensed by the bishop, and they were at all times liable to visitation from ecclesiastical authority. The grammar schools, however, were never organized like the gymnasiums, but each school

remained independent of the rest and of any national combination.

Nor were the Calvinistic colleges united into a national system, except where they came into Germany, when they were absorbed into the gymnasial system. The state system of education established by the Scotch parliament in the parishes, often gave secondary training, as well as elementary. And in America the establishment and control of the "grammar" schools, inherited from the mother country, were vested in the authorities of the State and the several towns. On the other hand, the Catholic education in all countries found its secondary schools largely in the colleges of the Jesuits, and the subordination of the individual to authority and the Church was insisted upon.

In the case of the universities, many remained loyal to Catholicism and a few new Catholic foundations grew out of the Reformation. All these adhered to the principle of submission to ecclesiastical authority. But the majority of the universities in the Protestant states of Germany followed their princes when they changed from the old creed to the new. Wittenberg, through its connection with Luther and Melanchthon, was the first German university to become Protestant, but others, like Marburg, Königsberg, Jena, Helmstadt, and Dorpat followed rapidly. Sometimes new Protestant universities, as in the case of Altdorf and Strassburg, were developed out of gymnasiums. The English universities, Oxford and Cambridge, went over to Protestantism with the national Church. In America, too, Harvard and other early colleges were closely connected with the various commonwealths and with the Calvinistic or the Anglican communion, according to the colony.

**The lapse into formalism.** — There came to be in both Catholic and Protestant institutions a tendency to regard the subjects taught as materials for discipline rather than as valuable for their content. The studies largely became an end in themselves and were deprived of almost all their vitality. The curriculum of the institutions became fixed and stereotyped in nature, and education lapsed into a formalism but little superior to that of the medieval scholastics. The methods of teaching came to stress memory more than reason. The Protestants had claimed to depend less upon uncritical and obedient acceptance of dogma than upon the constant application of reason to the Scriptures, but they soon tended to emphasize the importance of authority and the repression of the individual quite as clearly as the Catholics, who definitely held that reason is out of place and unreliable as a final guide in education and life.

Hence, except for launching the great conception of state support and control of education, the Reformation accomplished but little directly making for individualism and progress, either through the Catholic awakening or the Protestant revolts. Education fell back before long into the grooves of formalism, repression, and distrust of reason. There resulted a tendency, almost as marked as in the days of scholasticism, to test life and the educational preparation for living by a formulation of belief.

#### SUMMARY OF THE CHAPTER

Luther's educational positions are most fully revealed in his well-known *Letter* and *Sermon*. He holds that one aim of education should be to prepare for citizenship, and that it should be state-supported, and these recommendations were somewhat embodied in actual schools by his associates, Melancthon and Bugenhagen. Zwingli was killed before he could greatly influence education, but the educational insti-

tutions of Calvin spread rapidly through Switzerland, France, Netherlands, Puritan England, and Scotland. In England Henry VIII and Edward VI confiscated the property of some three hundred monastic and other ecclesiastical schools, but subsequently many of these were refounded.

The Jesuit colleges were organized to extend Catholic Christianity. The lower colleges were humanistic, and the higher taught "philosophy" and theology. The teachers were trained, and the methods, though *memoriter* and emulative, were effective. The influence of the Jesuit colleges was phenomenal, but they failed to meet new conditions. Elementary and industrial education was given an impulse for the Catholics by the schools of the Christian Brothers. They also opened training schools for teachers, and perfected the "simultaneous" method.

Among the Protestants and some Catholics in Germany, Holland, Scotland, and certain of the American colonies, the Reformation inclined toward universal elementary education and control of the schools by the state. The secondary schools in Protestant countries also came largely under civic authorities, although the clergy still taught and inspected them, while Catholic secondary education was furnished mostly by the Jesuit colleges. In many instances the universities turned Protestant, and new universities, Protestant and Catholic, were founded.

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## CHAPTER IX

### REALISM AND DISCIPLINE IN EDUCATION

#### EARLY REALISM AND THE INNOVATORS

It is obvious that by the seventeenth century humanism was everywhere losing its vitality and declining into a narrow "Ciceronianism" (see p. 123), and that the Reformation was hardening once more into fixed concepts and a dogmatic formalism. The awakened intellect of Europe, however, was tending to find still another mode of expression in the educational movement that has come to be known as "realism." The process of emancipating the individual from tradition and repressive authority had not altogether ceased, but it was manifesting itself mainly through a rather different channel. The movement of realism implied a search for a method by which "reality" may be known.

**Humanistic realism.** — In its most distinct and latest form, "sense realism," it held that real knowledge comes through the senses and reason rather than through memory and reliance on tradition, and in this way it interpreted the "real things" as being individual objects. Educational realism, therefore, concerned itself ultimately with investigation in the natural sciences, but even before objects were regarded as the true realities, there seems to have been some effort among the later humanists to seek for "real things" in the ideas that were represented by the written words. This broader type of humanism, in consequence, tended to break from a restriction to words

and set forms and to return to the interest in the content of classical literature that marked the Renaissance before its decline into formalism.

This tendency may, therefore, properly be called "humanistic realism." With its emphasis upon content usually went a study of social and physical phenomena, in order to throw light upon the passages under consideration. Illustrations of this humanistic realism are found in many writers of the sixteenth and seventeenth centuries. The poet and schoolmaster, John Milton (1608-1674), for example, while a remarkable classicist himself, in his *Tractate of Education* objects to the usual humanistic education, and says of the pupil, "if he have not studied the solid things in them as well as the words and lexicons, he were nothing so much to be esteemed as any yeoman or tradesman competently wise in his mother dialect only." And he would teach the Latin writers on agriculture, and the Greek writers on natural history, geography, and medicine for the sake of the subject-matter.

✓ **Social realism.** — But there was another phase of early realism, which often appeared in conjunction with humanistic education, and may be called "social realism." Its adherents strove to adapt education to actual living in a real world, and to afford direct practical preparation for the opportunities and duties of life. It was generally recommended as the means of education for all members of the upper social class. It sought to combine with the literary elements taught the clergy in the Middle Ages and the scholar in the Renaissance, certain remnants of the old chivalric education as the proper training for gentlemen. It held schools to be of less value as an agency for educating the young aristocrats than training through a tutor and travel.

Hence an education in social realism usually included a study of heraldry, genealogy, riding, fencing, and gymnastics, and involved a study of modern languages and the customs and institutions of neighboring countries. A good illustration of this type of education is found in the educational essays of Michel de Montaigne (1533-1592), who in his *Education of Children* declares: "I would have travel the book my young gentleman should study with most attention, for so many humors, so many sects, so many judgments, opinions, laws, and customs, teach us to judge aright of our own, and inform our understanding to discover its imperfection and natural infirmity." He further holds that, while a gentleman has need of Latin and Greek, he should first study his own language and those of his neighbors.

Similarly, John Locke (1632-1704), in his *Some Thoughts concerning Education*, states the aims of education in the order of their value as "*Virtue, Wisdom* (i.e., worldly wisdom), *Breeding, and Learning*" The proper training, he maintained, can be secured by the young gentleman only through a tutor, who "should himself be well-bred, understanding the Ways of Carriage and Measures of Civility in all the Variety of Persons, Times, and Places, and keep his Pupil, as much as his Age requires, constantly to the Observation of them." In considering the subject-matter of education, he maintains that "besides what is to be had from Study and Books, there are other *Accomplishments* necessary for a Gentleman," — dancing, music, horseback riding, fencing, and wrestling.

A number of similar books on the education of a gentleman were published during this period. The most conspicuous of these was the work of Castiglione called *The Courtier* (*El Cortegiano*), which was translated into many

languages, but there were also numerous books in English, such as Elyot's *Governour*, Brathwaite's *English Gentleman*, and Peacham's *The Compleat Gentleman*.

**Two types of early realism often combined.** — Humanistic and social realism, however, constantly appear together in the works of the same author, and it is often difficult to distinguish a writer as advocating one type or the other. Although either element may seem to be more prominent in the treatise of a certain writer, the two phases of education are largely bound up in each other. While Milton, for instance, is in the main a humanistic realist and advises an education in languages and books, he recommends that considerable time be given to the social sciences. He also advocates the experience and knowledge that would come from travel in England and abroad, and defines education as "that which fits a man to perform justly, skillfully, and magnanimously all the offices both private and public of peace and war."

On the other hand, Montaigne, the social realist, seems quite as strenuous in urging a more realistic humanism. In his essay *On Pedantry*, he launches most vigorous ridicule against the prevailing narrow humanistic education, with its memorizing of words and forms, and insists that the progress of the pupil should be judged "not by the testimony of his memory, but that of his understanding." And it is equally difficult to state whether humanistic or social elements prevail in Locke's *Thoughts*, the *Gargantua* and *Pantagruel* of Rabelais (1495-1553), the *Elementarie* and *Positons* of Mulcaster (1530-1611), and other treatises of the period.

**Development of Ritterakademien.** — All of these early realists held to a broader and better-rounded training and

more natural and informal methods than those in vogue. So suggestive have their recommendations proved to modern education that these authors have often been known as the "innovators." Yet their theories do not seem to have affected greatly the educational practice of the times. They did tend to disrupt traditionalism and the formal humanism and to bring education into touch with society and preparation for real life, but their influence appeared through their successors and later education rather than directly in the schools of the period. Locke, for instance, in addition to the influence he had upon Rousseau, Pestalozzi, and other reformers, must in some measure have been responsible for the great development of the physical and social sides of education in the public and grammar schools of England, together with the tendency of these institutions to consider such aspects of rather more importance than the purely intellectual. His plea for a tutor as the means of shaping manners and morals has also probably had its effect upon the education of the English aristocracy.

In the German states, on the other hand, there arose at the courts during the seventeenth century an actually new type of educational institution as the outgrowth of social realism. Here, in place of the old humanistic education, there was developed a special training for the young nobles in French, Italian, Spanish, and English, in such accomplishments as courtly conduct, dancing, fencing, and riding, and in philosophy, mathematics, physics, geography, statistics, law, genealogy, and heraldry. The educational institutions in which this training was embodied were known as *Ritterakademien* or "academies for the nobles." Such academies were founded at Colberg, Luneberg, Vienna, Wolfenbuttel, and many other centers

before the close of the century. They originally covered the work of the gymnasium, although substituting the modern languages, sciences, and the knightly arts that have been mentioned for the Greek and Hebrew, and adding a little from the course of the university. Gradually, however, they became part of the regular secondary system.

**The development of academies in England.** — Milton's suggestions were ultimately materialized in an even more influential type of school. In the *Tractate* he had recommended that his ideal education be carried out in an institution to be known as an "academy." Such a school was to be "erected in every city throughout this land." It should train boys from the age of twelve to twenty-one, and should provide both secondary and higher education. Institutions based very closely upon this plan were about a generation later actually organized in a number of places by the Puritans. Under the harsh Act of Uniformity (1662) two thousand non-conforming clergymen were driven from their parishes, and in many instances found school teaching a congenial means of earning a livelihood, and at the same time of furnishing higher education in "academies" to the young dissenters, who were excluded from the universities and grammar schools.

The first of the academies was that established by Richard Frankland at Rathmill in 1665, and this was followed by the institutions of John Woodhouse at Sheriff-hales, of Charles Morton at Newington Green, and of some thirty other educators of whom we have record at other places. These institutions were largely humanistic in their realism, and, since their chief function was to fit for the ministry, they included Latin, Greek, and Hebrew in their course, but they were also rich in mathematics,

natural and social sciences, modern languages, and the vernacular. The new tendency was also broadened and amplified by Locke's *Thoughts* (1693), which became the great guide for the managers of the Puritan academies. In 1689, when the Act of Toleration put non-conformity upon a legal footing, the academies were allowed to be regularly incorporated.

**Academies in America.** — Academies arose also in America. When the number of religious denominations had greatly increased and the demands upon secondary education had expanded, the "grammar schools" (see pp. 127 f.), with their narrow denominational ideals and their limitation to a classical training and college preparation, proved inadequate, and efforts were made to organize academies as a supplement. There may have been earlier academies in America, but the first well-known suggestion of an academy was made in 1743 by Benjamin Franklin.<sup>1</sup> He wished to inaugurate an education that would prepare for life, rather than for college. Accordingly, he proposed for the youth of Pennsylvania a course in which English grammar and composition, penmanship, arithmetic, drawing, geography, history, the natural sciences, oratory, civics, and logic were to be emphasized. He would gladly have excluded Latin and other languages altogether, but for politic reasons these courses were allowed to be elective.

Through the efforts of a number of leading citizens, such an academy was opened at Philadelphia (Fig. 49), in 1749 (although not chartered as an academy until 1753). During the next generation a number of similar institutions sprang up, especially in the Middle and Southern colonies.

<sup>1</sup> In his earliest writing he had specifically attacked the weaknesses of existing colleges, especially Harvard. See Thomas Woody's *Educational Views of Benjamin Franklin*, pp. 103 ff.

A great impulse was given the movement by the foundation of the two Phillips academies — one in 1778 at Andover, Massachusetts, and the other three years later at Exeter, New Hampshire. The Dummer Grammar School (opened in 1763) was reorganized as an academy in 1782, and the movement spread rapidly throughout New England during the last two decades of the eighteenth century. Shortly after the Revolution, owing in part to the inability or unwillingness of the towns to maintain grammar schools, and in part to the wider appeal and greater usefulness of the academies, the latter institutions quite eclipsed the former, and became for about half a century the prevailing type of secondary school in the United States.

Before the middle of the nineteenth century more than seven thousand of these academics had sprung up. They were usually endowed institutions managed by a close corporation, but were often largely supported by subscriptions from the neighborhood, and sometimes subsidized by the state. Located in small towns or villages, the academies served a wide constituency and made provision for boarding as well as day pupils. Unlike the grammar schools, they were not originally intended to prepare for the learned professions exclusively, but, as time passed, they tended more and more to become preparatory schools for the colleges, instead of finishing schools for the middle classes of society. As we shall see in Chapter XIII, in certain other respects the academies were destined to play an important part in education in the United States. They were the first institutions of secondary education to offer opportunities to women, and for some time they furnished the only means of training teachers for the elementary schools.



## SENSE REALISM (EARLY SCIENTIFIC MOVEMENT)

**Growth of natural science, discovery, and invention.** — But the realistic tendency did not pause with reviving the ideas represented by the words nor with the endeavor to bring the pupil into touch with the life he was to lead. The earlier realism seems to have been simply a stage in the process of transition from the narrow and formal humanism to a realism obtained through the senses, which may be regarded as the beginning of the modern scientific movement. Science had started to develop as early as the time of the schoolman, Roger Bacon (1214-1294), but for three centuries it was not kindly received. Even during the Renaissance the Church had continued to oppose it bitterly, because it tended to conflict with religious dogma, although this age did not object to the revival of the classics. Accordingly, the classics became strongly entrenched in educational tradition, and their advocates offered the most obstinate opposition to the sciences.

However, concomitant with the growth of reason and the partial removal of the theological ban, there was developed a remarkable scientific movement, with a variety of discoveries and inventions. For more than a millenium the Greek developments in astronomy and physics had been accepted as final, but toward the close of the sixteenth and during the seventeenth century these *dicta* were completely upset. The theory of a solar system, which replaced the Ptolemaic interpretation, was published by Copernicus (1473-1543), Kepler (1571-1630) explained the motion of the planets by three simple laws, and, through the construction of a telescope, Galileo (1564-1642) revealed new celestial phenomena. Investigations of this kind paved the way for the formulation of

the law of universal gravitation and the laws of motion by Sir Isaac Newton (1642-1727), which united the universe into a single comprehensive system and completed the foundations for modern mechanics. Likewise, about the same time, the other great development in science among the Greeks, anatomy and physiology, was completely revolutionized. Through the discovery of the double circulation of the blood by Harvey (1578-1657), the old theory of motion by suction, which had been promulgated by Galen, was completely shattered, and a great impetus was given to investigations in these biological fields.

**Francis Bacon and the inductive method.** — In consequence of this scientific progress, educational theorists began to introduce science and a knowledge of real things into the curriculum. It came to be widely felt that humanism gave a knowledge only of words, books, and opinions, and did not even at its best lead to a study of real things. Hence new methods and new books were produced, to shorten and improve the study of the classical languages, and new content was brought into the courses of study. The movement also included an attempt at a formulation of scientific principles in education and an adaptation to the nature of the child. This led to the work of Francis Bacon (1561-1626), who undertook to formulate the method he called "induction." By advocating its use, he pointed the way to its development as a scientific method in education, and has, accordingly, been ordinarily known as the first sense realist. He reacted from deductive logic, which was currently supposed to be the sole method of Aristotle, and took his cue in formulating a new method of reasoning from the many scientific workers of his time.

However, his *Novum Organum* ("new instrument"), as

he called his treatise, in endeavoring to create a method whereby anyone could attain all the knowledge of which the human mind was capable, undertook far too much, and resulted in a purely mechanical procedure. Briefly stated, his plan was, after ridding the mind of individual prejudices, to observe and carefully tabulate lists of all the facts of nature, and from these discover the underlying law by comparing the cases where a certain phenomenon appears and where it does not. By this method neither Bacon himself nor anyone else has ever made any real contribution to science. The true method of induction, which was evident even in the work of Kepler, and came to be more so in the discoveries of Harvey and Newton, stresses rather the part played by scientific imagination, as it is manifested by men of genius in the forming of an hypothesis. Nevertheless, while Bacon did not formulate the inductive method of modern science, he largely helped to rid the times of an unwise dependence upon *a priori* reasoning, and he did call attention to the necessity of careful observation and experimentation.

**Bacon's suggestions and Ratich's methods.** — Bacon was not a teacher, and his treatment of educational problems appears in brief and scattered passages. But, while he plans no serious modification in the existing organization of schools, he does in his *New Atlantis* imply an interest in promoting scientific research and higher education. In the ideal society depicted in that work, he describes an organization of scholars called "Salomon's House," whose members in their investigations anticipate much that scientists and inventors have today only just begun to realize. From this description Bacon would seem to believe that education should be organized upon the basis of society's gradually accumulating a knowledge:

of nature and imparting it to all pupils at every stage. At any rate, in his *Advancement of Learning* he definitely suggests a wider course of study, more complete equipment for scientific investigation, a closer co-operation among institutions of learning, and a forwarding of "unfinished sciences." This plan was specified in the educational creed of the later sense realists, who worked out the Baconian theory of education. Hence, while not greatly interested in education himself, Bacon profoundly influenced many who were.

In particular, Bacon's method was directly applied to education by a German known as Ratich (1571-1635). This educator probably became acquainted with the sense realism of Bacon while studying in England, and undertook to found a system of linguistic training upon it. In his teaching he held to the principle of "one thing at a time and often repeated," meaning thereby that, in studying a language, one should master a single book before taking up another. As soon as his pupils knew their letters, they were required to learn Genesis thoroughly for the sake of their German. Each chapter was read twice by the teacher, while the pupil followed the text with his finger. When the pupils could read the book perfectly, they were taught grammar from it as a text. In taking up Latin, a play of Terence was treated in similar fashion. Others of his educational precepts were even more distinctly realistic, such, for example, as "follow the order of nature," "everything by experiment and induction," and "nothing is to be learned by rote." Thus Ratich not only helped shape some of the best methods for teaching languages, but anticipated the main principles of modern pedagogy and stimulated many other thinkers.

**Comenius and his textbooks on Latin.** — The influence of this German innovator was especially developed and extended by the great Moravian educator, John Amos Comenius (1592–1670). The educational achievements of Comenius were the outgrowth of sense realism, and appear in three directions (1) the series of texts for learning Latin; (2) his *Great Didactic*, and (3) his attempts to create an encyclopedic organization of scientific knowledge (*pansophia*).

His textbooks were influenced by the plan of Ratich, but were more specifically indebted for their method and names to a Jesuit educator named Bateus, who had written a similar work. They were intended to afford a grasp of all the ordinary scientific knowledge of the day and at the same time facilitate the study of Latin. They contained an arrangement into sentences of several thousand Latin words for the most familiar objects and ideas. The Latin was printed on the right-hand side of the page, and on the left was given a translation in the vernacular. On this plan he undertook to write some four textbooks of graded difficulty, and eventually produced also a supplementary work in which the text was accompanied with pictures. Each object in the illustrations of this book was marked with a number corresponding to one in the text. It was called *Orbis Sensualium Pictus* ("The World of Sense Objects Pictured"), and constitutes the first illustrated reading book on record (Fig 29).

**The Great Didactic.** — But these books on teaching Latin realistically were only part of the work that Comenius performed. More extensive was his *Great Didactic*, which described his ideas as to what the theory and practice of education should be. In this book he strove to assimilate all that was good in the realistic movement as

*Muntero Caps*, 20. &c.  
So the *Furrier*  
maketh *Furred Garments*  
of *Furs*.

*Amiculum*, 20. &c.  
Sic *Pellio*  
facit *Pellicia*  
è *Pellibus*.

The Shoemaker.

LXIII

Sutor.



The *Shoemaker*, 1.  
maketh *Slippers*, 7.  
*Shoes*, 8.  
(in which is seen  
above, the *Upper-leather*,  
beneath the *Sole*,  
and on both sides  
the *Latchets*)  
*Boots*, 9.  
and *High Shoes*, 10.  
of *Leather*, 5.  
(which is cut with a  
*Cutting-knife*), 6.  
by means of an *Awl*, 2.  
and *Lingel*, 3.  
upon a *Last*, 4.

*Sutor*, 1.  
conficit *Crepidæ* (*Sandalia*), 7. *Calceos*, 8.  
(in quibus spectatur  
superne *Obstragulum*,  
inferne *Solea*,  
et utrinque  
*Ansæ*)  
*Ocreas*, 9.  
et *Perones*, 10.  
e *Corio*, 5.  
(quod discinditur  
*Scalpro Sutorio*, 6.)  
ope *Subulæ*, 2  
et *Fili picati*, 3.  
super *Modum*, 4.

FIG 29 A page from the *Orbis Pictus* of Comenius, illustrating a lesson on a trade

Reproduced from the edition published by C W Bardeen, 1887

presented by Bacon, Ratich, and others. Here, probably as an outgrowth of his religious attitude, he held to "knowledge, morality, and piety" as the aim of education, and advocated training for all — boys and girls, noble and low-born, rich and poor. His organization of education consisted of four periods of six years each. The first period of instruction was that through infancy, or up to the age of six. It was to be given in the school of "the mother's lap," which should exist in every house. For childhood, or from six to twelve, was to be organized the "vernacular school," which should appear in every hamlet and village. From that time up to eighteen was to come the "Latin school," to be maintained in every city; and, finally, for youth from eighteen to twenty-four, there should be a university in every kingdom or province. Such a system of universal education would bring about the custom of education according to ability, rather than social status, and was a suggestion some three centuries in advance of the times.

**Pansophic content of education.** — The rest of the works of Comenius may be regarded as amplifications of various parts of this *Great Didactic*. Besides the series of textbooks already mentioned, which he seems to have written for the Latin school, he produced a set of texts for the vernacular school and one for the infant school. But the phase of the *Great Didactic* most often elaborated was the realistic one of *pansophia* or "universal knowledge," which he developed in many of the scientific works he wrote later and in various educational institutions that he undertook to found. It remained the ruling passion throughout his life, and he went so far as to hold that an encyclopedic training in science should be given at every stage of education.

Even in the mother school the infant was to make a beginning with geography, history, and various sciences, grammar, rhetoric, and dialectic, music, arithmetic, geometry, and astronomy, and the rudiments of economics, politics, ethics, metaphysics, and religion, but his attainment was not expected to be as formidable as the names of the subjects sound. It was, in fact, not unlike the training of the modern kindergarten. In a similar way each succeeding stage was to enlarge the body of knowledge along all these lines. "In the earlier schools everything is taught in a general and undefined manner, while in those which follow the information is particularized and exact." Moreover, beyond the university, which, like the lower schools, was to make teaching its chief function, Comenius held it to be important that there should be a "didactic college" devoted to scientific investigation, in which learned men from all nations should co-operate.

**Method and contributions of Comenius.** — Comenius also intended to have this pansophic instruction imparted in keeping with sense realism. He insisted that the "method of nature" must always be observed and followed. His principles concerning the working of nature were laid down *a priori*, but it is probable that they had been previously worked out inductively from his school-room experience. Nor is it remarkable that he did not consistently employ induction. The natural sciences were young in his day, and he had partially inherited the scholastic notion that truth cannot be fully secured through the senses or by reason. Moreover, in the application of his general method to the specific teaching of various lines — sciences, reading, writing, singing, languages, morality, and piety — he utilized more fully the induction of Bacon. He insisted, for example, that, in order to make a genuine



impression upon the mind, one must deal with realities rather than books. The objects themselves, or such representations of them as can be conveyed by copies, models, and pictures, should be studied.

Thus the work of Comenius was based primarily upon sense realism, but he added many modifications and new elements of his own. He may in the fullest sense be considered the great educational theorist and reformer of the seventeenth century. His practical ability is especially shown in the series of Latin textbooks, which far excelled the works of several contemporaries on similar lines. They were translated into many languages, and went through an almost unlimited number of editions. But the remarkable theoretical work of Comenius had little effect upon the schools of the period, and until about the middle of the nineteenth century the *Great Didactic* was scarcely known. By that time the principles of Comenius were being unconsciously taken up by others, and they indirectly became the basis of modern education. His spirit appeared not only in the ideas of subsequent theorists, but even in the actual curricula and methods of educational institutions.

#### EFFECT OF REALISM UPON EDUCATION

**Realistic tendencies in the schools.** — While the effect of sense realism upon the schools seems to have been slow and indirect, the movement was obvious even by the seventeenth century. In the German states there came to be a decided tendency throughout the elementary schools to increase instruction in the vernacular, as recommended by Ratich and Comenius, and to learn first the German grammar rather than the Latin. With this movement were joined the increase in universal and com-

pulsory education urged by the reformers, and an introduction of rudimentary science, in addition to reading, writing, arithmetic, religion, and singing. Similar attempts at instruction in the vernacular and in science were made in the states of Italy, and in France, Holland, and England.

The new realistic tendencies appeared also in secondary education. While in Germany it was not until the eighteenth century that there were any evidences of sense realism in the gymnasiums, languages of neighboring countries and considerable science appeared in the course of the *Ritterakademien* (see pp 166 f) and even more in the schools of Francke and other "pietists" at Halle. Semler here started the first *Realschule*, which went even more fully into the vernacular, modern languages, mathematics, and sciences. This new type of secondary institution was brought by Hecker to Berlin in 1747, and similar institutions soon spread throughout Prussia. In England, while very few of the grammar and public schools (see p. 127) as yet introduced even the elements of science into their course, the academies (see p. 168) were rich in sciences, mathematics, and the vernacular. This was also true of the academies that sprang up in America (see p. 169).

**Growth of science instruction in the universities.** — The universities were slower in responding to the movement of sense realism. As the result of its pietistic origin, however, the University of Halle was realistic almost from its beginning in 1692. Gottingen, the next institution to become hospitable to the tendency, did not start it until 1737. But soon afterward the movement became general, and by the end of the eighteenth century many German universities — certainly all that were under Protestant auspices — had created professorships in the sciences.

While the English universities, Oxford and Cambridge, were in general slower than those of Germany in adopting the new subjects, during the professorship of Isaac Newton (1669-1702) considerable was done to make Cambridge a mathematical and scientific center, and in the course of the eighteenth century several chairs in the sciences were established both here and in other institutions.

America also felt the scientific impulse in its higher institutions, as we shall see later on (Chapter XIII). Some study of astronomy, botany, and physics was possible at Harvard even in the seventeenth century, and during the eighteenth Yale, Princeton, King's (afterward Columbia), Dartmouth, Union, and Pennsylvania all came to offer a little work in physics, and at times in chemistry, geology, astronomy, and biology. In his proposals for the prospective "seminary" in New York (1753), which was destined to become Columbia University, and in the actual course of the academy at Philadelphia (later the University of Pennsylvania), over which he presided, Dr William Smith placed a most progressive program in all the sciences.

#### FORMAL DISCIPLINE IN EDUCATION

**Locke's work and its various classifications.** — Besides the educational ideas of John Locke (1632-1704) already discussed, another theory implied by him should receive attention because of the deep but misleading impression it has left upon modern education. This is the conclusion that the main purpose of education is to exercise the mind and thus secure a species of "mental muscle" that may be utilized in any direction. From it has arisen the doctrine of "formal discipline" and the theory of "transfers." Hence it has been widely held that through the study of

certain particular subjects — notably Greek, Latin, and mathematics — the various “faculties” of the mind can be trained so as to result in its storing up “power” for application to all sorts of intellectual tasks.

We have previously seen (p. 165) that the general tenor of Locke's *Thoughts concerning Education* would indicate that he belongs to the group of early realists. There are also elements in this work that look in the direction of sense realism, and we shall later (pp. 216 ff.) find that many of his ideas proved so suggestive and similar to the thought of Rousseau that he has sometimes been classed among the advocates of naturalism. But Locke's *Thoughts*, by which his educational position is often exclusively judged, were simply a set of practical suggestions for the education of a gentleman, written for a friend as advice in bringing up his son. They make clear his general sympathy with the current educational reform, but do not bring out his main point of view. His central thought becomes more definite through the philosophical principles formulated in his famous *Essay concerning the Human Understanding*, and through the intellectual training suggested in his other educational work, *Conduct of the Understanding*, which was originally an additional book and an application of the *Essay*.

**Disciplinary theory in mental, moral, and physical training.** — In these works Locke's underlying thought as to the real aim of intellectual, moral, and physical training would seem to be best summed up in the word “discipline.” His educational attitude is a natural corollary of his philosophic position. In his *Essay* he holds that ideas are not born in one, but that all knowledge comes from experience. The mind, he declares, is like “white paper, or wax,” upon which impressions from the outside world are made

through our senses. When the ideas are once in mind, it is necessary to determine what they tell us in the way of truth. Hence, to train the mind to make proper discriminations, he declares in the *Conduct of the Understanding* that practice and discipline are necessary. "Would you have a man reason well, you must use him to it betimes, exercise his mind in observing the connection of ideas and following them in train."

As to the means of effecting this mental discipline, Locke holds "Nothing does this better than mathematics, which therefore I think should be taught all those who have the time and opportunity, not so much to make them mathematicians as to make them reasonable creatures, that having got the way of reasoning, which that study necessarily brings the mind to, they might be able to transfer it to other parts of knowledge as they shall have occasion." Similarly, he advises a wide range of sciences, "to accustom our minds to all sorts of ideas and the proper ways of examining their habitudes and relations, not to make them perfect in any one of the sciences, but so to open and dispose their minds as may best make them capable of any, when they shall apply themselves to it."

The same disciplinary conception of the purpose of education underlies Locke's ideals of moral training: "That a man is able to deny himself his own desires, cross his own inclinations, and purely follow what reason directs as best, tho' the appetite lean the other way. This power is to be got and improved by custom, made easy and familiar by an early practice."

Even more definitely disciplinary is the well-known "hardening process," which he recommends as the aim of physical training: "The first thing to be taken care of is that children be not too warmly clad or covered, winter

or summer. The face, when we are born, is no less tender than any other part of the body. It is use alone hardens it, and makes it more able to endure the cold." He likewise advises that a boy's "feet be washed every day in cold water," that he "have his shoes so thin that they might leak and let in water," that he "play in the wind and sun without a hat," and that "his bed be hard."

**Origin of the theory of formal discipline.** — This emphasis upon discipline in training of every sort — intellectual, moral, physical — has often caused Locke to be regarded as the first great exponent of the educational doctrine of "formal discipline." That theory has been so widespread and important during the past two centuries as to require consideration here. During the Middle Ages and the early period of humanism Latin was not only of cultural but of practical utilitarian value. It was the language of the Church and of diplomacy, and in it was locked up all the learning of the times. All guidance in science, literature, philosophy, and politics that received any consideration was couched in its terms. But with the decline of ecclesiastical influence, the development of vernacular languages, and the scientific awakening in the seventeenth century (see pp. 171 f.), this utilitarian argument for the study of Latin was largely swept away. Appeal was then made in behalf of the subject to the doctrine of "formal discipline," which was supported by the "faculty psychology" of Aristotle.

It gradually came to be held that the study of Latin yields results out of all proportion to the effort expended, and gives a general power that may be applied in any direction. A similar claim was before long made for Greek and mathematics. Mathematics was declared to sharpen the "faculty of reason," while the classic lan-

guages were believed to improve the "faculty of memory." Consequently, it was argued by formal disciplinarians that everyone should take these all-important studies, regardless of his interest, ability, or purpose in life, since he would thus best prepare himself for any field of labor. All who proved unfitted for these particular subjects have, therefore, been supposed to be not qualified for the higher duties and responsibilities, and to be unworthy of consideration in higher education.

This doctrine of formal discipline has had a tremendous effect upon each stage of education in practically every country and during every period until recently. Even the scientists and advocates of a variety of other subjects, instead of arguing for content value and specific training, have made strenuous efforts to meet this argument by pointing out the formal discipline in their own studies (see Chapter XIX). Excellent examples of the effect of this theory upon educational institutions are found in the formal classicism of the English grammar and public schools and universities and of the German gymnasiums. While in the United States a newer and more flexible society has enabled changes to be more readily made, as late as the last decade of the nineteenth century, Greek, Latin, and mathematics largely made up the staples in high schools, colleges, and universities, and the husks of formal grammar were often defended in elementary education upon the score of formal discipline.

**Reaction to the doctrine of formal discipline.** — At the beginning of the twentieth century, however, with the abandonment of the "faculty psychology" and the development of educational theory, a decided reaction from the doctrine of formal discipline began among psychologists and common sense educators. It is now

widely conceded that specific, rather than general, power is developed by the various studies, and no student is held to be unworthy of education or impervious to culture, simply because he is not adapted to the classics or mathematics. In consequence, the content of studies, rather than the process of acquisition, has come to be emphasized, the curriculum has everywhere been broadened, and the principle of the election of subjects has largely been recognized.

It has, however, come to be felt within recent years that in reacting from the old theory of formal discipline, educators went too far. While it is still held that emphasis must be laid upon the specific character of mental training, there are some generalized powers and values to be obtained. It is realized that "a general benefit can be derived from specific training in so far as the person trained has consciously wrought out in connection with the specific training a general concept of method, based upon the specific methods used in that training" (F. A. Hodge). Thus a student who has once realized the value of close reasoning through mathematical demonstrations is likely to develop a general concept of method, and can hardly be satisfied any longer with slovenly thinking in other fields; and the fine discriminations discovered in the classical authors, the balanced judgment used in historical method, and the accuracy required in the study of the sciences, may well be abstracted and tend to furnish a generalized ideal for other lines of endeavor.

**Locke's real position on formal discipline.** — It would seem as if this modified form of general power were all that Locke had in mind. He definitely concedes that "learning pages of Latin by heart, no more fits the memory for retention of anything else, than the graving of one sentence in lead makes it the more capable of retaining



firmly any other characters." And while he holds that the method of reasoning in mathematics can be transferred "to other parts of knowledge," he declares that men who are reasonable in some things are often very unreasonable in others, and "men who may reason well in one sort of matters today may not do so at all a year hence." The generalized benefits that students may obtain from mathematics are simply that it "would show them the necessity there is, in reasoning, to separate all distinct ideas, and see the habitudes that all those concerned in the present inquiry have to one another, and to lay by those which relate not to the proposition in hand and wholly to leave them out of the reckoning. This is that which in other subjects is absolutely requisite to just reasoning."

Thus Locke appears to be rather in harmony with modern educational theory than to be a thorough-going advocate of formal discipline. At any rate, it should be recognized that he did not defend, but vigorously assailed, the grammatical and linguistic grind in the English public schools. His attitude toward formal discipline seems to have sprung from his desire to root out the traditional and false, rather than to support the narrow humanistic curricula of the times.

### SUMMARY OF THE CHAPTER

The intellectual awakening that appeared in the Renaissance and Reformation found another avenue for expression in early realism. This movement had two phases: (1) humanistic realism, which emphasized the content in classical literature, and (2) social realism, which strove to adapt education to actual life. But the two phases generally occurred together, and the classification of a treatise under one head or the other is largely a matter of emphasis. The influence of the two phases was mostly indirect, but through social realism a

special training arose in the *Ritterakademien* in Germany, while Milton's humanistic realism was embodied in the "academies" of England, and afterward of America.

In the seventeenth century scientific investigation and sense realism developed rapidly. Theorists were led to introduce science into the curriculum and to advocate a study of "real things." Bacon undertook to formulate "induction," and while he did not understand the importance of an hypothesis, he did much to rid the times of *a priori* reasoning. On the basis of sense realism, Ratich anticipated many principles of modern pedagogy, but he was unsuccessful in applying his ideas. Comenius (1) produced texts for teaching Latin objectively, (2) crystallized his educational principles in the *Great Didactic*, and (3) attempted an encyclopedic organization of knowledge. He wished to make this knowledge part of the course at every stage of education, and, while he was not consistently inductive, he made a great advance in the use of this method. Through sense realism, rudimentary science was introduced into the elementary schools, the *Ritterakademien* and the pietist schools stressed the subject, and professorships of science were founded in the universities.

Locke is often classed with the advocates of realism or of naturalism, but the keynote to his thought is "discipline." This is to be obtained in intellectual training through mathematics, in moral training, through the control of desires by reason, and in physical training, through a "hardening process." Locke has, therefore, often been viewed as the great advocate of the theory of formal discipline, according to which certain subjects yield a general power that may be applied in any direction, and should be studied by all. This doctrine has greatly influenced education, but in the late nineteenth century there was a decided reaction from it. Recently this extreme reaction has been modified, and a position taken with which Locke's real attitude would seem to be in harmony.

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The first study concludes that the expectation of any large differences in general improvement of the mind from one study rather than another is doomed to disappointment. The second study indicates that the traditional doctrine that certain subjects are prime disciplines is unsupported, and that their seeming superiority is due rather to an unconscious selection by intellectual students.

## CHAPTER X

### EDUCATION IN THE AMERICAN COLONIES

#### EUROPEAN BACKGROUND OF COLONIAL EDUCATION

We have hitherto had little occasion to speak of American education, except by way of anticipating certain historic trends and important institutions that have been introduced into America from Europe. But we have now reached the period when the New World began to be extensively colonized, and in the rest of our study educational practices in America will become increasingly distinctive and influential.

**Colonial schools reflect Reformation conditions.** — The schools of America have sprung from European institutions, and we find their roots deep in the social soil of the lands from which the colonists came. While the universal, free, and secular schools of the United States are a natural accompaniment of its republican form of government, like the new democracy itself, this development of popular education was not reached at a bound. At first the American schools resembled the institutions of the mother country as closely as the frontier life of the colonies would permit. The seventeenth century may, therefore, in the history of American education be considered distinctly a period of "transplantation of schools," with little or no conscious change. It is only toward the middle of the next century, as new social and political conditions were evolving and the days of the Revolution were approaching, that there are evident the gradual modification of European

ideals and the differentiation of American schools toward an ideal of their own.

Hence, in order to understand American education in the colonial period, we must briefly consider the social and educational conditions in Europe during the early part of the seventeenth century, when the colonists began their migrations. The thirteen American colonies were started while the fierce agitations of the Reformation period were still at their height. The settlers were Protestants for the most part, and many of them had emigrated in order to establish institutions — political, ecclesiastical, educational — that would conform to their own ideals, and in most cases education in the New World was given significance by the dominant religious interests and conflicts of the old. At this time in practically all the states of Europe, educational institutions were largely controlled and supported by the Church and religious orders with the assistance of private benevolence, although a few schools were maintained by pre-Reformation craft guilds and so had a close connection with municipalities. Thus the American colonists naturally reflected the religious conception and ecclesiastical control of education in the lands from which they had come, but had some acquaintance with free schools and municipal management.

**Influence of the Calvinist and the Anglican creeds.** — But while at first the motive in education everywhere was primarily religious, it took on different forms in the several colonies according to the theological attitude and experience of their settlers. Followers of such extreme reformers as Luther and Calvin (see pp 137 and 140) generally held that a system of schools should be supported or at least established by the state, and that all children should have an opportunity to secure an education sufficient to

make them familiar with the Scriptures. If people were to be guided by the word of God, they must all be able to read it. But this view of education was not held by those for whom, as in the English Church, the Reformation was not primarily a religious and theological, but rather an ecclesiastical and political, revolt (see p. 141). In Holland and Scotland, for example, where Calvinism prevailed, universal education was upheld by the mass of the people, but in France and England only a small minority, the Huguenots and Puritans respectively, adopted this attitude.

Hence it came to pass that wherever in America the influence of Puritanism, the Dutch Reformed religion, Scotch Presbyterianism, Quakerism, Lutheranism, or any of the German sects was felt, the nucleus of public education appeared, while in the colonies where the Anglican communion was dominant, the aristocratic idea of education prevailed and training of the masses was neglected. But even among the Calvinists, who held that elementary education should be universal, and that the State as well as the Church should hold itself responsible for its being furnished, the logical solution of the problem was not for a long time fully realized. At first even the Calvinist colonies did not altogether believe that education should be the same in character for all classes of people or that the State should bear the expense through taxation. The settlers of New England came nearer than the others to recognizing this distinctively American interpretation of public education, which was destined eventually to develop everywhere, but in the beginning even they placed the financial responsibility to some extent upon the parent or guardian.

As a result of differing traditions and characteristics, then, the colonies seem from the first to have developed



three chief types of school organization. These were: (1) the *laissez faire* method, current in Virginia and the South; (2) the parochial organization of New Netherlands and the Middle Colonies in general; and (3) the governmental activity in Massachusetts and most of the other New England colonies. We may profitably discuss these typical organizations in order.

#### TYPES OF EDUCATION IN THE COLONIES

**The *laissez faire* type in Virginia.** — Turning first to the aristocratic colonies of the South, we may select Virginia, the oldest of these provinces, as representative of the type. That colony constituted the first attempt of England at reproducing herself in the New World, and here were found an order of society, form of government, established church, and distinction between classes, similar to those of the mother country. For some time there existed a sharp line of demarcation between the gentry or land-owning class and the masses, which included the landless, indentured servants, and other dependents. In education, the colonists had brought with them the idea of a classical higher and secondary training for the upper classes through the semi-monastic type of university and the Latin grammar school (see pp. 129 f.), and but little in the way of elementary education, except private "dame" schools and catechetical training by the clergy. There were, in addition, the family "tutorial" education, both secondary and elementary, for the children of the wealthy, and evident attempts at perpetuating the old English industrial training through apprenticeship for orphans and children of the poor. But no such institution as a public elementary school was anywhere known.

In consequence, the educational legislation in colonial Virginia was concerned mainly with (a) the organization of a college or university, (b) individual schools of secondary grade, and (c) apprenticeship education for the poor. During the first quarter of a century most educational efforts in this colony were put forth in behalf of the foundation of an institution of higher learning, and were aided by the king, the Anglican bishops, and the London Company. As early as 1619 over £2000 and a grant of ten thousand acres of land had been obtained for a university at Henrico, but this plan was soon brought to a violent end by the Indian massacre of 1622, and the funds were diverted to a school in the Bahamas. An even more fruitless endeavor to found a college was made in 1624 by Sir Edwin Palmer upon an island in the Susquehanna. During the colonial period also there was at least one abortive attempt to establish a school by collections and gifts, and during the second quarter-century of the settlement there were actually chartered a number of secondary institutions, endowed with bequests of land, money, cows, horses, slaves, or other property. These schools, however, were local, and resembled the endowed Latin schools of England, except that they may sometimes have been obliged by circumstances to include more or less elementary instruction. In 1660 there was also a renewed attempt to establish by subscriptions a college and "free (secondary) school for the advancement of learning, education of youth, supply of the ministry and promotion of piety."

None of these efforts at founding colleges or schools could have been very successful, for, a decade later, when interrogated as to what kind of education existed in the colonies, Governor Berkeley made his famous reply:

The same course that is taken in England out of towns, every man according to his ability instructing his children . I thank God there are no free schools, and I hope we shall not have them these hundred years, for learning has brought disobedience and heresy and sects into the world

But, despite the biased remarks of the testy governor, by 1692 the constant effort to obtain an institution of learning was finally rewarded. Through the activities of the Reverend James Blair, D.D., the bishop's commissary in Virginia, a charter for the College of William and Mary, a gift of £2000 and of twenty thousand acres of land, and the right to certain colonial taxes were obtained from the king, and large donations were made by the planters and additional support was provided by the assembly. In fact, the college was for the times munificently endowed, and it did a great work in training scholars, statesmen, judges, military officers, and other leaders during the struggle for independence. Toward the end of the colonial period (1749) Washington College (now Washington and Lee University) was also founded in Virginia. Moreover, "free" schools greatly increased in number and had their courses much improved.

Throughout this early period, however, education was regarded as a special privilege, and the masses were mostly employed in raising tobacco and in other manual pursuits. For the sons of these people, the only educational legislation was that provided between 1643 and 1748 in various acts concerning the industrial training of the poor, apprentices, wards, and orphans. In keeping with English precedents, these children were taught a trade by the masters to whom they were indentured, or trained in the flax-house established by public funds at James City. Thus, by the middle of the eighteenth century a fair pro-

vision of secondary and higher education had been voluntarily made in various localities, but as yet no real interest in common schools had been shown by the responsible classes in Virginia. Education was there, as in England, predominantly "selective" in character.

**Parochial schools in the Middle colonies.** — A second type of colonial organization of education appears in the New Netherlands, as the country between the Delaware and Connecticut rivers was called during the period of Dutch control (1621-1674). In contrast to the *laissez faire* attitude of Virginia, the foundation of schools was parochial. Instead of the chance endowment of schools wherever the benefactors happened to be located, a school was founded in connection with every church. This arrangement grew out of the Calvinistic conception of universal education. Long before the Dutch came to America, the parochial school had, as a means of preserving the Reformed faith, become an indispensable part of church organization, but the state was also somewhat concerned itself in furnishing the facilities for education. The Reformed Dutch Church was granted the right to examine teachers, enforce subscription to the creed, and, in the case of the elementary schools at least, largely determine the appointments, but the legal support and control of education were vested in the civil authorities. Hence there early arose in New Amsterdam and the villages of New Netherlands a parochial school system and a distribution of control between Church and State very similar to that in the mother country.

The Dutch schools differed from those in the Anglican colonies of the South, which stressed secondary education, in being chiefly elementary, although some attempt at conducting a Latin or "grammar" (see p. 126) school was

also made in New Amsterdam from 1652 on. However, after the English took permanent possession of New York (1674), the parochial school of the city was limited to the support of the Reformed Church, and, as a result of its long refusal to adopt the English language, its potential influence toward the realization of universal education was completely lost. While the Dutch schools of the villages generally retained the joint control and support of the local "court" and church, with a constantly increasing domination of the former, as a whole the English occupation of New York would seem to have set public education back about a hundred years. At any rate, by the eighteenth century colonial New York had largely fallen into the same *laissez faire* support of education that prevailed in the Southern colonies.

As a colony Pennsylvania developed a church school organization similar to that of the New Netherlands, except that it was carried on in connection with a number of creeds and that the municipality was seldom a co-ordinate factor. Pennsylvania was more heterogeneous in population than New York, as the tolerant attitude of the Quaker government had attracted groups of settlers from a variety of Protestant sects — Lutherans, German Reformed, Mennonites, Moravians, and others — and each was devoted to its own denominational schools. Early in the eighteenth century all these religious bodies were authorized by statute to conduct schools and to receive bequests and hold land for their support. Even before this the Friends had started the famous "Penn Charter School" which, while itself a secondary school, soon established elementary schools as branches throughout the city upon various arrangements. Likewise in keeping with the conclusions of various "Yearly Meetings" (1722, 1746,

etc.), the Quakers also provided elementary schools in close proximity to all meeting-houses throughout the colony. Similarly, the Lutherans and the Mennonite congregations each set up a school alongside of the church as early as possible.

Moreover, there was some attempt at promoting "grammar" and higher education, especially in the case of the well-known Moravian schools at Bethlehem, Nazareth, and Lititz, and the Presbyterian Log College at Neshaminy. This last-named institution became the cradle of the College of New Jersey at Princeton (see p. 205). A somewhat broader spirit was likewise manifest in the voluntary "neighborhood" schools of western Pennsylvania and elsewhere and in the attempts at universal education made by colonists from Connecticut in the Wyoming Valley. Likewise an enduring institution was created through the foundation of an "academy" set up at Philadelphia in 1749 by Benjamin Franklin and chartered as a college six years later (see p. 284). This foundation was intended to train public men and teachers and fuse the various nationalities in a common citizenship (see p. 169), and it later became the University of Pennsylvania. But, as a whole, parochial schools exerted the greatest influence in the colony of Pennsylvania.

**Town schools in Massachusetts.** — The third type of colonial school organization appeared first in Massachusetts. As compared with the *laissez faire* and the parochial attitudes, governmental activity here prevailed. Accordingly, Massachusetts may be said to have inaugurated the first approach to a system of public education in America. The character of the schools in this colony developed from its peculiar form of society and government. It was democratic, concentrated, and homo-

geneous, as compared with the cosmopolitan and sectarian social structure in the Middle colonies, or the class distinctions and scattered population of the South. While there were some servants and dependents in the Massachusetts Bay Colony and a distinction was made between "freemen" and others, there were at no time rival elements that found themselves unable to combine. The settlements were not a mere confederation, but the blending of all elements into a single organism, where the individuality of each was merged in a new social whole.

This condition was the result of an ingrained religious conviction that everyone was a child of God, capable of becoming a vital and useful member of society, and that the community was obligated to give him training to that end in the home, the church, and the school. Out of this Calvinistic conception sprang a spirit of co-operation and helpfulness, a general participation of the townsmen in local government, and the Massachusetts type of school organization. A common school (Fig. 30) seems to have been supported in most towns from the first by voluntary or compulsory subscriptions, and before the middle of the century there had been established by the colony at large an educational system in which every citizen had a working share. Because of this inclusiveness and unity in matters theological, the schools, while religious and moral, could hardly be considered sectarian.



FIG. 30 Town school at Dedham, Massachusetts, with watch-tower, built in 1648

The first educational act of the colony, passed by the General Court (i.e., legislature) in 1642, was similar to the old English apprenticeship law in its provision for industrial education, and, while it was broad enough to include some literary elements and a rate to procure materials was established, no school was mentioned in it. But the act of 1647 specifically referred to both elementary and secondary schools. Its quaint language well illustrates the religious attitude of the times and it is in general one of the important documents in the history of American life. It read in full .

It being one chiefe project of ytould deluder, Sathan, to keepe men from the knowledge of ye Scriptures, as in former times by keeping ym in an unknowne tongue, so in these latter times by perswading from ye use of tongues, yt so at least ye true sence & meaning of ye originall might be clouded by false glosses of saint seeming deceivers, yt learning may not be buried in ye grave of our fathers in ye church & commonwealth, the Lord assisting our endeavours, —

It is therefore ordered yt every township in this jurisdiction, after ye Lord hath increased ym to ye number of 50 houscholders, shall then forthwith appoint one within their towne to teach all such children as shall resort to him to write & reade, whose wages shall be paid either by ye parents or masters of such children, or by ye inhabitants in generall, by way of supply, as ye major part of those yt order ye prudentials of ye towne shall appoint; provided, those yt send their children be not oppressed by paying much more yn they can have ym taught for in other townes; & it is further ordered yt where any towne shall increase to ye number of 100 families or householders, they shall set up a grammar schoole, ye master thereof being able to instruct youth so farr as they may be fited for ye university, provided yt if any towne neglect ye performance hereof above one yeare, yt every such towne shall pay 5£ to ye next schoole till they shall performe this order

Thus early did Massachusetts provide for elementary and secondary ("grammer") schools under civil authority. While the schools might be supported in part by tuition



fees, as well as by a town tax, and there was no obligation as yet to "resort" to the school, the germs of the American public school system clearly appear in this educational activity of the legislature in colonial Massachusetts. The (Latin) grammar schools of the colony were copied from those in England, which many of the prominent men of the Massachusetts colony had attended (see p 129). Of these the Boston Latin School (Fig. 31) was opened in 1635, but



FIG 31 Boston Latin School, founded in 1635

it was soon followed by grammar schools at Charlestown, Ipswich, Salem, Dorchester, Newbury, Cambridge, and Roxbury, and under the act of 1647 similar schools arose in all other large towns in Massachusetts. These grammar schools were intended to prepare boys for Harvard College (Fig. 32), which was founded in 1636.

**Types of education in the other colonies.** — In general, the organization of education in the remaining nine colonies can be classed according to location under one of the three types described above, but there are various modifications and some exceptions to be noted. In the South, for example, the *laissez faire* foundation of schools and colleges, characteristic of Virginia, appears in the four other colonies, but in each case there would seem to be some overlapping in attitude. Maryland, for example,

while mainly following the same random foundation of schools as Virginia, also seriously endeavored (1696) to support schools in every county by a general colonial tax. South Carolina likewise made an effort to establish a county system of schools (1722), and even a decade before that, it undertook to subsidize a school in each parish.

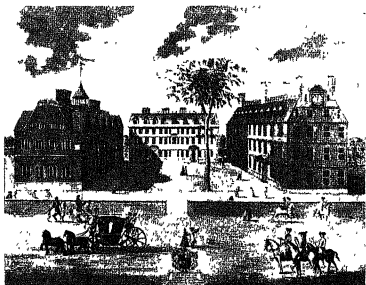


FIG 32 The buildings of Harvard College (founded 1636) erected in 1675, 1699, and 1720

North Carolina went even further and, through the influence of a large number of Irish and Scotch Presbyterians and German Protestants who had immigrated for the most part from Pennsylvania, after 1728 began to break away from the aristocratic policy and to found common schools. Georgia, on the other hand, made no effort toward providing schools on its own account but had its entire budget, including the items for education,

financed by the English parliament up to the time of the Revolution.

Again, after the permanent occupation (1674) by the English, New York lapsed into the *laissez faire* plan (see p. 195). The situation in the remaining middle colonies, New Jersey and Delaware, was similar. While something was accomplished there for elementary education through parochial schools of the various sects, much of the school organization was random. The former colony, however, made a start in higher education by establishing the College of New Jersey (1746), afterward destined to be known as Princeton University. Likewise Rhode Island, dominated by a fanatical devotion to freedom in thought and speech, failed throughout colonial days to pass any general regulations on education like those of Massachusetts, and followed more nearly the chance organization of schools in Virginia. But the other New England colonies, Connecticut and New Hampshire (when it separated from Massachusetts), tended to provide schools after the Massachusetts plan. As a matter of fact, the Hartford colony of Connecticut in its statutes of 1650 copied almost *verbatim* the phraseology used by Massachusetts in the establishment of schools three years before. Yale College, founded at New Haven in 1701, was a replica of Harvard.

#### CHARACTERISTICS OF THE COLONIAL SCHOOLS

**The aim and content of education.** — It would seem clear from the above that it was the governmental activity first appearing in New England education which was destined to develop and become typical of America. It will, however, remain for later chapters to show how this type of organization gradually replaced the other two, for

such a consummation could scarcely be expected before Americans had generally come to depart from the ideals transplanted from Europe and to think of themselves as a separate nation. While toward the outbreak of the Revolution social conditions were becoming more liberal and less sectarian, throughout the colonial period as a whole the prevailing motive in education may be regarded as mainly religious and ecclesiastical.

The organization of schools differed in the several colonies, but education was, in general, calculated to perpetuate the beliefs and practices of the various Churches. In accordance with these traditions the elementary schools in all cases aimed to acquaint the children with their religious duties in this life and to fit them for the life to come, while the colleges that had been founded were primarily intended to rear a learned ministry in some particular creed and the Latin grammar schools made it their business to prepare youths for admission to these colleges.

Owing to the general aristocratic attitude, elementary schools open to all were not common in the colonies outside of New England. Wherever they did exist, too, they embodied the religious and sectarian ideals of the times. This is obvious from a brief inspection of their course of study and of the textbooks in use. In these schools the children of the colonial period learned to read the word of God and were trained in the peculiar formulas prescribed by the discipline of some Church. To this end the chief textbooks everywhere were the Bible or a portion thereof and some catechism, such as the Anglican, Reformed, Lutheran, or Westminster.

Preparation for reading these religious texts was at first furnished through the *Hornbook*. This device consisted

of a small wooden paddle (Fig. 33) upon which had been pasted a single sheet of paper containing the alphabet, the Christian invocation, and the Lord's prayer, and over which had been fastened a thin piece of transparent horn, as a protection. Toward the end of the seventeenth



FIG 33 *The Hornbook*

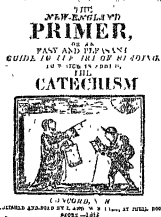


FIG 34 Title page of *The New England Primer*

century the *Hornbook* was replaced by the historic work known as *The New England Primer* (Fig. 34). This was a small book deeply religious in tone and containing but little secular material. It presented the alphabet through rhymed couplets filled with moral precepts and illustrated with rude wood-cuts (Fig. 35), but gave lists of separate syllables as building material and of complete words from one to six syllables in length, but most of the space was devoted to Bible quotations, the Lord's prayer, the Apostles' creed, the famous poem of John Rogers' *Martyrdom*, a short catechism, and, in New England, a

more simplified catechism known as "Spiritual Milk for American Babes," and sometimes "A Dialogue between Christ, Youth, and the Devil." With some variation in matter and in the title of this primer, it was used throughout the colonies, and, crude as it was, became the chief textbook in elementary schools during the colonial period.

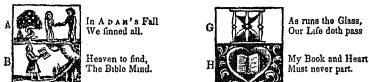


FIG 35 A portion of a page in *The New England Primer*, illustrating the alphabet.

The pupils were not taught writing in the schools where they learned to read. Instruction in this art was offered, if at all, under a special master, known as a "scrivener," at a "writing school," and was acquired through dictation and practice. In the writing schools might also be learned what little of ciphering was taught in those days. Usually the material on this subject was dictated by the teacher to the pupils, who made their own book of rules, but at least one text, Hodder's *Arithmetick*, seems to have been introduced from England before the close of the colonial period.

**Teachers and methods of teaching.**—As might be expected, the art of teaching and the school apparatus were likewise crude and unrefined in these colonial schools. Pupils were taught to read by first spelling out the letters, then pronouncing the syllables, and finally forming words, and all recitations were heard individually as the teacher found time for the various pupils. Moreover, slates, pencils, and blackboards were as yet unknown in the schools, and, as paper was expensive and generally poor in

quality, birch bark or even sand was often used in teaching writing and calculation. Home-made ink and quill pens had to serve in case the writing was to be preserved, and the only means of drying a manuscript came through shaking a small "sand-box" over it. Such materials and methods made learning a tedious process. Ability to read even moderately well might prove a task involving years of effort, and writing and ciphering often had to be entirely neglected. Discipline was usually severe and sometimes brutal. The bunch of switches always figured in a teacher's equipment, and a "whipping post" might be set up in the school or near by.

The teachers themselves were as a whole poorly prepared. The pay was poor and often irregular, and the work was generally regarded as a stepping-stone to some other occupation. It was not infrequently performed by itinerant schoolmasters of doubtful habits or in the South and occasionally elsewhere by indentured servants. In the "dame" schools for youngsters and during the summer term in the town schools, when the big boys were occupied with farm duties, women were generally employed, but it required a man to handle the winter school, when the youths attended and brawn was considered more essential than brains. This often afforded a golden opportunity for young men to help earn their way through college. Probably the best work was done by these college students or by such teachers as were licensed under the auspices of some Church, but the former were temporary and the latter usually had to give considerable time to assisting the minister in his duties or to serving as precentor, sexton, or bell-ringer for the church.

A like bondage to the spirit of the times existed in the secondary and higher institutions. The grammar schools,

which spread throughout the colonies, copied the narrow curriculum inherited from England and afforded instruction only in religion, Greek, Latin, and a meager amount of mathematics. The curriculum in the handful of colleges seems similarly narrow from a present-day point of view. Until toward the close of colonial days there were few studies in these institutions that could afford any real outlook or preparation for life, except possibly a little training in oratory, formal logic, and dogmatic philosophy.

In both grammar schools and colleges the provision for textbooks was likewise crude. For teaching the keystone subject of Latin, for example, Lily's *Grammar* (see p. 125) was sometimes obtainable, but, as a rule, the students were forced to build their own grammars until Ezekiel Cheever's *Accidence* was published in the early part of the eighteenth century. The masters of the grammar schools and the presidents and tutors in the colleges of the time, while often men of considerable scholarship, were primarily ministers of the gospel rather than teachers, and were greatly burdened with clerical and disciplinary duties. Soundness of faith and sternness in control were apt to be considered of more import in higher education than learning or pedagogical skill.

#### SUMMARY OF THE CHAPTER

The schools of the American colonies closely resembled those of the European countries from which the colonists came, and were influenced by the various religious conceptions of education that were current in each case. In general, where the Calvinistic attitude prevailed, the colonies attempted universal education, but where the Anglican communion dominated, the aristocratic ideal of education was in evidence.

Three types of colonial school organization appeared (1) *laissez faire* in Virginia, (2) "parochial" in New Netherlands, and (3) govern-



mental activity in Massachusetts. The South generally followed the same plan as Virginia, and New York (after the English occupation) and Rhode Island also developed on this basis. The other Middle and New England colonies followed the parochial and governmental patterns respectively.

The aim of education in the colonies was mainly religious and ecclesiastical, as shown in the course of study and the *Hornbook* and the *New England Primer*. Besides reading in the regular schools, writing and a little ciphering might be learned in special "writing schools." Methods and apparatus were very crude, discipline severe, and teachers poorly prepared. In the secondary and higher institutions also the curriculum was narrow, and textbooks and teaching were poor.

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## CHAPTER XI

### NATURALISM IN EDUCATION

#### THE REVOLT FROM ABSOLUTISM

\* **The eighteenth century as a climax.** — The ideals of universality and of state control in the education of America and other countries were greatly assisted by the climax to the general revolt against absolutism and ecclesiasticism that appeared in the eighteenth century. During this period of time most strenuous efforts were made to interpret life from a more reasonable and natural point of view and to overthrow all customs and institutions that did not square with these tests. This century marked the climax of the rebellion against authority and against the enslavement of the individual that had been manifesting itself in one form or another from the close of the Middle Ages. One revival after another — the Renaissance, the Reformation, realism, Puritanism, Pictism — had burst forth only to fade away or harden into a new formalism and authoritative standard. Yet with each effort something was really accomplished for freedom and progress, and the way was paved for the seemingly abrupt break from tradition that appears to mark the period roughly included in the eighteenth century. At length despotism and ecclesiasticism were becoming thoroughly intolerable, and the individual tended more and more to assert his right to be an end in himself. At times all institutional barriers were swept

aside, and in the French Revolution destruction went to an extreme.

**The two epochs in the eighteenth century.**— This revolt of the eighteenth century from absolutism in politics, religion, and thought falls naturally into two parts. During the first half of the century the movement was directed against repression in theology and intellect, and during the second half against repression in politics and the rights of man. The one tendency appeared in the rationalism and skepticism of such men as Voltaire (1694–1778) and the “encyclopedists,” while the other became evident chiefly in the emotionalism and “naturalism” of Rousseau. Although these aspects of the revolutionary movement somewhat overlapped each other and had certain features in common, they should be clearly distinguished. The former prepared the way for the latter by seeking to destroy existing abuses, especially of the Church, by the application of reason, but it gave no ear to the claims of the masses. It sought merely to replace the traditionalism of the clergy and monarch with the tyranny of an intellectual few, and held that the lower classes were too dull to think and be educated. In distinction to this rule of “reason,” “naturalism” declared that the intellect could not always be trusted as the proper monitor, but that conduct could better be guided by the emotions as the true expression of nature. It opposed the control of intellectual aristocracy and demanded rights for the common man and an education based upon nature.

**Rousseau and his times.**— The foremost exponent of naturalism is found in Jean Jacques Rousseau (1712–1778). The social and educational positions of this reformer are readily explained by his antecedents and career. He inherited a mercurial temperament, love of pleasure, and

irresponsibility, and these characteristics were strengthened by his indulgent rearing and low companionships. A love of nature was impressed upon him by the wonderful scenery of the country in which he spent his boyhood and years of wandering. He learned to sympathize with the poor and oppressed, whose condition was forced on his attention during this period. The instruction he received was sporadic, inaccurate, and unsystematic, and left him a prey to any theory that might occur to him. When he finally settled down in Paris, his days of vagabondage had left an ineffaceable stamp upon him and he had become the very



FIG 36 Jean Jacques Rousseau

person to voice a protest of the times against the artificiality and extravagance of the aristocracy and the poverty and degradation of the peasants. Hence Rousseau (Fig. 36), emotional, uncontrolled, and half-trained as he was, was destined to bring to consciousness the inchoate revolutionary sentiments and desire to return to the original beneficent state of nature from which it was felt that man had departed.

### ROUSSEAU'S *Emile*

**Purpose of the *Emile*.** — In 1750 Rousseau first crystallized the spirit of the age and the results of his own experience in a discourse on *The Progress of the Arts and Sciences*. In this essay he declared with much fervor and conviction, though rather illogically, that the existing

oppression and corruption were due to a departure from nature in the advancement of civilization. In the following years he wrote several other works along the same line of thought, among which were his influential essay on political ethics, known as the *Social Contract*, and that most revolutionary treatise, the *Emile*, published in 1762. In the *Social Contract* he finds the ideal state in a society managed by the people, where simplicity and natural wants control, though a state of nature is still the starting-point. The same ideas applied to education appear in the *Emile*, which has made the name of Rousseau famous and most concerns us here. The influence of this book is shown by the library of volumes since written to contradict, correct, or disseminate the doctrines expressed in it. It forced a rich harvest of educational thinking for a century after its appearance, and has affected our ideas upon education from that day to this.

In the *Emile* Rousseau aims to replace the conventional and formal education of the day with a training that should be natural and spontaneous. Under the existing *régime* it was customary for boys and girls to be dressed like men and women of fashion (Fig. 37), and for education to be largely one of deportment and the dancing master. On the intellectual side, education was largely traditional and consisted chiefly of a training in Latin, grammar, words, and *memoriter* work. Rousseau scathingly criticises these practices, and applies his naturalistic principles to an imaginary pupil named Emile "from the moment of his birth up to the time when, having become a mature man, he will no longer need any other guide than himself." This work is divided into five parts, four of which deal with Emile's education in the stages of infancy, childhood, boyhood, and youth respectively, and



the fifth with the training of the girl who is to become his wife.

**Physical education.** — In the first book, which takes him from birth to five years of age, his main desire is for physical activities, and he should, therefore, be placed under simple, free, and healthful conditions which will enable him to make the most of these. He must be removed to the country, where he will be close to nature, and farthest from the contaminating influence of civilization. His growth and training must be as spontaneous as possible. He must have nothing to do with either medicine or doctors, "unless his life is in evident danger, for then they can do nothing worse than kill him."



FIG 37. The child as a miniature adult  
Reproduced from a French fashion plate of the  
eighteenth century

His natural movements must not be restrained by caps, bands, or swaddling clothes, and he should be nursed by his own mother. He should likewise be accustomed to baths of all sorts of temperature, and he should not be forced into fixed ways of any sort.

**Sense education.** — Next, in the period of childhood, between the years of five and twelve, which is treated in the second book, Emile desires most to exercise his legs and arms, and to touch, to see, and in other ways to

sense things. This, therefore, is the time for training his limbs and senses. To obtain this training, Emile is to wear short, loose, and scanty clothing, go bareheaded, and have his body inured to cold and heat, and be generally subjected to a "hardening process" similar to that recommended by Locke (see p 183). He is to learn to swim, and to practice long and high jumps, leaping walls, and scaling rocks. But, what is more important, his eye is to be exercised through natural problems in weighing, measuring, and estimating masses, heights, and distances, and his ear to be rendered sensitive to harmony by learning to sing. He is to receive no intellectual training, but he must acquire some ideas about conduct and property through "natural consequences." If he breaks the furniture or the windows, let him suffer the consequences that arise from his act. If he carelessly digs up the sprouting melons of the gardener, in order to plant beans for himself, let the gardener in turn uproot the beans. ✓

**Intellectual education.** — However, between twelve and fifteen, there comes a stage when he displays an insistent curiosity concerning natural phenomena and a constant appetite for rational knowledge. This is the natural period to begin formal instruction. Since not much can be learned within three years, the boy is to study only those subjects which are useful and not incomprehensible and misleading, and so is largely limited to the natural sciences. But in order that he may become economically independent, he is to learn a trade — cabinet-making. The most effective method of instruction, Rousseau holds, comes through appealing to the curiosity and interest in investigation, which are so prominent in the boy at this time. Hence Emile is to learn astronomy through observing the sun when rising

and setting during the different seasons, and geography through being lost in the forest and endeavoring to find his way out. He is to have no textbooks, except the one work, *Robinson Crusoe*, "where all the natural needs of man are exhibited in a manner obvious to the mind of a child "

**Moral training.** — The fourth book takes Emile from the age of fifteen to twenty. During this period his sex interests will appear and should be guided so as to become the basis of social and moral relationships. He is now to become moral, affectionate, and religious. Here again training is not to be accomplished by the formal method of precepts, but in a natural way by bringing the youth into contact with his fellowmen and appealing to his emotions. He is to visit infirmaries, hospitals, and prisons, and witness concrete examples of wretchedness in all stages, but that this training may not render him cynical or hypercritical, it should be corrected by the study of history, where one sees men simply as a spectator without feeling or passion. Further, in order to cure him of vanity, he is to be exposed to flatterers, spendthrifts, and sharpers and allowed to suffer the consequences.

**Education of woman.** — Emile at length becomes a man, and a life companion must be found for him. Accordingly, the last book deals with the education of women. It is the weakest part of Rousseau's work. He does not allow a woman to have any individuality, but considers her as simply supplementary to the nature of man. Like men, women should be given adequate bodily training, but rather for the sake of physical charms and of producing vigorous offspring than for their own development. Their instinctive love of pleasing through dress should be made of service by teaching them sewing, embroidery, lacework,

and designing. They should be obedient and industrious, and they ought early to be brought under restraint. Girls should also be taught singing, dancing, and other accomplishments. They should be instructed dogmatically in religion, and in ethical matters they should be largely guided by public opinion. A woman may not learn philosophy, art, or science, but she should study men.

**Influence of the *Emile*.** — Such was Rousseau's notion of the natural individualistic education for a man and the passive and repressive training suitable for a woman, and of the happiness and prosperity that were bound to ensue. To make a fair estimate of the *Emile* and its influence is not easy. It is necessary to put aside all of one's prejudices against the weak and offensive personality of the author, and to forget the inconsistencies and contradictions of the work itself. The *Emile* has always been accounted a work of great richness, power, and underlying wisdom, and each of its defects is more than balanced by a corresponding merit. Moreover, the most fundamental movements in modern educational progress — sociological, scientific, and psychological — may be said to have germinated through the *Emile*.

**Sociological movements in modern education.** — The most marked feature of the Rousselian education and the one most subject to criticism has been its extreme revolt against civilization and all social control. A state of nature is held to be the ideal condition, and all social relations are regarded as degenerate. One should remember, however, that the times and the cause had need of just so extreme a doctrine. Such radical individualism alone could enable Rousseau to break the bondage to the past, and, after having thus cleared the ground, many of the *sociological movements* in modern educational organ-

ization and content were suggested or were made possible by him. He first held that all members of society should be trained industrially so as to contribute to their own support and should be taught to be sympathetic and benevolent toward their fellows. Thus the industrial work of Pestalozzi and Fellenberg, the moral aim of education held by Herbart, the "social participation" in the practice of Froebel, and the present-day emphasis upon vocational education, moral instruction, and training of defectives and of other extreme variations, alike find some of their roots in the *Emile*.

**Scientific movement in modern education.** — Moreover, since Rousseau repudiated all social traditions and accepted nature as his only guide, he was absolutely opposed to all book learning and exaggerated the value of observation. He consequently neglected the past, and would have robbed the pupil of all the experience of his fellows and of those who had gone before. But he emphasized the use of natural objects in the curriculum and developed the details of nature study and observational work to an extent never previously undertaken. Partly as a result of this influence, schools and colleges have come to include in their course the study of physical forces, natural environment, plants, and animals. Therein Rousseau not only anticipates somewhat the nature study and geography of Pestalozzi, Basedow, Salzmann, and Ritter, but in a way foreshadows the arguments of Spencer and Huxley, and the *scientific movement* in modern education.

**Psychological movement in modern education.** — A matter of even greater importance is Rousseau's belief that education should be in accordance with the natural interests of the child. Although his knowledge of children was

defective and his recommendations were marred by unnatural breaks and filled with sentimentality, he saw the need of studying the child as the only basis for education. He himself stated many details of child development with much force and clarity, and, as a result of his appeal for such a study, the child has become the center of discussion in modern training. In this connection should especially be considered Rousseau's sharp division of the pupil's development into definite periods that seem but little connected with one another, and his prescription of a distinct education for each stage.

Such an attitude seems to be a breach of the gradual evolution of the individual and an extreme view, but he has thereby at least shown that there are characteristic differences at the various stages in the child's life, and that only as the proper activities are provided for each stage will it reach maturity or perfection. He may, therefore, be credited to a great degree with the increasing tendency to cease forcing upon children a fixed method of thinking, feeling, and acting, and for the gradual disappearance of the old ideas that a task is of educational value according as it is distasteful. Curiosity and interest rather are to be used as motives for study, and Rousseau therein points the way for the Herbartians. It is likewise due to him primarily that we have recognized the need of physical activities and sense training in the earlier development of the child as a foundation for its later growth and learning, and to these recommendations may be traced much of the object teaching of Pestalozzianism and the motor expression of Froebelianism. Thus Rousseau made a large contribution to educational methods by showing the value of motivation, of creating problems, and of utilizing the senses and activities of the child, and

may be regarded as the father of the *psychological movement* in modern education.

**First attempt to put naturalism into practice.** — Thus seeds of many modern developments in educational organization, method, and content, were sown by Rousseau, and he is seen to be the intellectual progenitor of many modern reformers. But his principles did not take immediate hold on the schools themselves, although their influence is manifested there as the nineteenth century advanced. In France they clearly formed a basis for much of the legislation concerning the universal, free, and secular organization of educational institutions. Likewise in America this revolutionary thought must have had much to do with gradually upsetting aristocratic and formal training of the young and with secularizing and universalizing the public school system. The first definite attempt, however, to put into actual practice the naturalistic education of Rousseau occurred in Germany through the writings of Basedow and the foundation of the educational institution known as the "Philanthropinum," which is of sufficient importance to demand separate discussion.

#### BASEDOW AND HIS WORK

**His educational writings.** — Johann Bernhard Basedow (1723-1790) had just the sort of temperament to be captivated by Rousseau's doctrines of naturalism and freedom in education. He was himself talented, but impulsive, unorthodox, and emotional, and he realized that German education needed just the antidote that naturalism was calculated to furnish. The schoolrooms were dismal and the work was unpleasant, physical training was neglected, and the discipline was severe. Children were regarded as adults in miniature (Fig. 37),

and the current schooling consisted largely of instruction in artificial deportment. The study of classics composed the entire intellectual curriculum, and the methods were purely grammatical.

Before coming under the spell of the *Emile*, Basedow had experimented with methods of teaching through conversation and play connected with surrounding objects, and in his later work he combined the naturalistic ideas of Rousseau with features from the *Orbis Pictus* of Comenius (see p. 175) and with some additions of his own. After obtaining a generous subsidy to develop a system of non-sectarian education, which should be practical in content and playlike in method, he produced his promised textbook, *Elementarwerk*, and the companion work for parents and teachers, known as *Methodenbuch*. His *Elementarwerk* was accompanied by a volume containing ninety-six plates, which illustrated its subject-matter, but were too large to be bound up with it. Through this text he furnished a knowledge of things and words in the form of a dialogue. In his *Methodenbuch* he made some advance upon Rousseau's account of the nature of children by finding that they are especially interested in motion and noise, and he would have shocked Rousseau by being so subservient to tradition as to suggest utilizing these interests in the teaching of Latin.

Later on Basedow and his followers also wrote a series of popular story books especially adapted to the nature and interests of children and filled with didactics, moralizing, and scraps of scientific information. These books seem to have been suggested by Rousseau's recommendation of *Robinson Crusoe* as a textbook and became the model for *The Swiss Family Robinson* and other popular books for children.



**Course and methods of the "Philanthropinum."** — Prince Leopold of Dessau was in 1771 induced to grant Basedow the means to found there a model school called the "Philanthropinum," which should embody that reformer's ideas. The underlying principle of this school was "everything according to nature." The natural instincts and interests of the children were only to be directed and not altogether suppressed. They were to be trained as children and not as adults, and the methods of learning were to be adapted to their stage of mentality. Rich and poor alike were to be trained, though the traditional idea still obtained that the natural education of the one class was for social activity and leadership and of the other for teaching.

Consequently, the wealthy boys were to spend six hours in school and two in manual labor, while those from families of small means labored six hours and studied two. Everyone, however, was taught handicrafts — carpentry, turning, planing, and threshing, as suggested in the third book of the *Emile*, and there were also physical exercises and games for all. Likewise, in keeping with the principles of Rousseau and Comenius, a wide objective and practical course was planned. It was to give some account of man, including bits of anthropology, anatomy, and physiology; of brute creation, especially the uses of domestic animals and their relation to industry; of trees and plants with their growth, culture, and products, of minerals and chemicals, of mathematical and physical instruments; and of trades, history, and commerce.

The most striking characteristic of the school was its recognition of child interests and the consequently improved methods. Languages were taught by speaking and then by reading, and grammar was not brought

in until late in the course. Facility in Latin was acquired through conversation, games, pictures, drawing, acting plays, and reading on practical and interesting subjects (Fig. 38). Instruction in arithmetic, geometry, geography, and nature study was fully as progressive as that in languages, and, while continuing Rousseau's suggestions,



FIG. 38 A naturalistic school

Reproduced from the *Elementarwerk* of Basedow

seems to anticipate much of the "object teaching" of Pestalozzi. Arithmetic was taught by mental methods, geometry by drawing figures accurately and neatly, and geography by beginning with one's home and extending out into the neighborhood, the town, the country, and the continent.

**Influence of the Philanthropinum.** — The attendance at the Philanthropinum was very small in the beginning, since the institution was regarded as an experiment, but

eventually the number of pupils rose to more than fifty. Most visitors were greatly pleased with the school, especially on account of the interested and alert appearance of the pupils. While, through the temperamental unfitness of Basedow, the school at Dessau soon had to close, institutions of the same type sprang up elsewhere, and some of them had a large influence upon education. The most striking and enduring of these schools was that established in 1784 by Christian Gotthilf Salzmann (1744-1811) at Schnepfenthal. Here much attention was given to nature study, "lessons on things," organized excursions, gardening, agricultural work, the care of domestic animals, and other features that anticipated later developments in education. Thus, although the philanthropic movement eventually deteriorated, it seems not to have been without good results, especially when we consider the educational conditions of the times. Through it new ideas concerning methods and industrial training were introduced into all parts of France and Switzerland, as well as Germany, and the first positive results of Rousseau's "naturalism" were embodied in education.

#### SUMMARY OF THE CHAPTER

During the eighteenth century, there appeared the climax to the revolt against absolutism. This movement was directed against repression of intellect in the first half of the century, and against repression of political rights in the second half. The former phase, through Voltaire, made reason the basis of society and education, but introduced the tyranny of an intellectual few, the latter, through Rousseau, promoted an emotionalism and "naturalism" that were in keeping with the sentiments of the times. The early treatises of Rousseau advocated a complete return to nature, but his later works somewhat modified this attitude.

In the *Emile* Rousseau attempts to outline a "natural" education from birth to manhood. The first book takes *Emile* from birth to

five years of age, and deals with the training of physical activities, the second, from five to twelve, treats of body and sense training, the third, from twelve to fifteen, is concerned with intellectual education through the natural sciences, the fourth, from fifteen to twenty, outlines his social and moral development, and the fifth describes the parasitic training of the girl he is to marry.

The *Emile* is often inconsistent, but brilliant and suggestive, and, while anti-social, the times demanded such a radical presentation. Through it Rousseau became the progenitor of the social, scientific, and psychological movements in education.

The first attempt to put the naturalism of Rousseau into actual practice was made by Basedow. He suggested that education should be practical in content and playful in method, and he produced texts on his system and started a school known as the "Philanthropinum." He planned a broad course, and taught languages through conversation, games, and drawing, and other subjects by similar natural methods. The Philanthropinum was successful. This type of school grew rapidly and introduced some good ideas into education.

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Chapter VII is on Rousseau, and VIII on Basedow.

<sup>1</sup> Where the publisher of a book has been given in a previous chapter, the name is not repeated.

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## CHAPTER XII

### PHILANTHROPY IN EDUCATION

#### EARLY CHARITY SCHOOLS

**Conditions in Great Britain during the eighteenth century.** — The eighteenth century cannot be regarded altogether as a period of revolution and destruction. While we have seen that such a characterization describes the prevailing tendencies of that century, there were also social and educational forces that looked to evolution and reform rather than to a complete disintegration of society and a return to primitive living. Even in Rousseau, the arch-destroyer of traditions, we found many evidences of a reconstruction along higher lines, and such a positive movement was decidedly obvious in Basedow, Salzmann, and other philanthropinists. But the forces of reconstruction were especially apparent in England. In the land of the Briton, progress is proverbially gradual, and the French tendency to cut short the social and educational process by substituting revolution for evolution does not often appear.

Yet conditions in England at this time might well have incited people to revolution. Wages were low, employment was irregular, and the laboring classes, who numbered fully one sixth of the population, were clad in rags, lived in hovels, and often went hungry. Opportunities for education in the rudiments were rare. The few elementary schools that remained after the Reformation had largely lost their endowments or had been perverted

into secondary institutions, and had suffered from incompetent and negligent masters. In order to meet the situation, toward the close of the seventeenth century there sprang up a succession of "charity schools," in which children of the poor were not only taught but boarded and sometimes provided with clothes, and the boys were prepared for apprenticeship and the girls for domestic service. Probably about one thousand schools upon this general philanthropic basis had been established in England and Wales by the middle of the eighteenth century. Most of these had received substantial endowment, but numbers of them were maintained by private subscriptions.

**S.P.C.K. and other charity schools in England.** — An agency that was of especial importance in opening charity schools was the "Society for the Promotion of Christian Knowledge" (often abbreviated to S P C K ), founded in 1698 by the Reverend Thomas Bray. While these schools were established, supported, and managed by local people, the Society assisted them from its own treasury and guaranteed their maintenance. The S P C K. also inspected the schools, advised the local managers, and furnished Bibles, prayer books, and catechisms at the cheapest rates possible. It made stringent regulations concerning the religious, moral, and pedagogical qualifications of its schoolmasters. Each master was required to teach the children their catechism and purge them of bad morals and manners, besides training them in reading, writing, and elementary arithmetic. The pupils were clothed, boarded, and at times even lodged, without expense.

The number of S P C K. schools grew by leaps and bounds, and by the close of the first decade there were eighty-eight within a radius of ten miles of London. The

gifts made had amounted to almost ten thousand pounds, and nearly one thousand boys and over four hundred girls had been sent out as apprentices. Before the middle of the eighteenth century the total number of these charity schools in England and Wales reached nearly two thousand, with about fifty thousand boys and girls in attendance. This increase in facilities for the education of the poor was often opposed by many in the upper classes, but the schools had some warm supporters, and Addison even held that as a result of them there would be "few in the next generation who will not at least be able to write and read."

The benefactions for these institutions continued to increase for nearly half a century, but by the middle of the eighteenth century popular interest had waned. The subscriptions began to fall off, the system of inspection and teaching became less effective, and the schools ceased to expand. Nevertheless, the example of the S.P.C.K. institutions was followed by a number of other charity schools, and the movement eventually succeeded in impressing the Church of England with a sense of responsibility for the establishment of a national school system upon a religious basis. The charity schools were largely continued throughout the eighteenth century, but in most instances after 1811 were absorbed by the new educational organization of the English Church, the so-called "National Society" (see pp. 239 f.)

**S.P.G. schools in America.** — A much more important organization was the off-shoot of the S.P.C.K., that arose chiefly to carry on charity schools in the American colonies. This association, the "Society for the Propagation of the Gospel in Foreign Parts" (commonly known as S.P.G.), was founded by Dr. Bray three years after the parent



society, but no schools were established for several years. The first school of the S.P.G. was opened in New York City in 1709 under William Huddleston, who had been conducting a school of his own there. It was intended that the new school should follow the plan of the charity schools in England, but, while free tuition and free books were granted from the beginning, it was not until many years later that the means of clothing the children gratuitously was provided. Under different masters and with varying fortunes, the school was supported by the Society until 1783, when the United States had finally cut loose from the mother country and started on a career of its own. Meanwhile Trinity Church had come more and more to take the initiative in the endowment and support of the school, and since the withdrawal of the Society from America the institution has been known as "Trinity Church School."

Schools of the same type were active throughout the colonies in the eighteenth century. We possess more or less complete accounts of these institutions in New York and all the other colonies, except Virginia, where they were not considered necessary. Except for size and local peculiarities, all of them closely resembled the school in New York City. The attendance ranged from eighteen or twenty pupils to nearly four times that number. Girls were generally admitted, and children of other denominations were often received on the same terms as those of Church of England members. The character of the course of study in the schools is indicated by the books furnished by the Society. In packets of various sizes it periodically sent over horn-books, primers, spellers, writing-paper and ink-horns, catechisms, psalters, prayer books, testaments, and Bibles.

Throughout its work in the American colonies, the S.P.G. met with various forms of opposition. The dissenters, Quakers, and others were often openly hostile through fear of the foundation of an established national church similar to that of England, and both sides displayed considerable sectarianism and bigotry. After 1750 the opposition to the Society increased in bitterness and became more general, owing to the feeling that its agents were supporting the king against the colonists. Yet its patronage of schools was most philanthropic and important for American education in the eighteenth century. While it insisted upon the interpretation of Christianity adopted by the Church of England, it stood first and foremost for the extension of religion and education to the virgin soil of America. It carried on its labors with devoted interest and showed great generosity, and its example was followed by a number of other groups in the colonies. The foundation of such schools must have exerted considerable influence toward eventual provision of universal education.

**Other charity schools in America.** — During the eighteenth century the efforts of the S P G were supplemented by the formation of minor associations and the establishment of other charity schools in various colonies. Perhaps the most noteworthy instance was the organization in 1753 of "A Society for Propagating the Knowledge of God among the Germans," and the maintenance of schools among the sects of Pennsylvania. These schools were managed by a general colonial board of six trustees who visited the schools annually and awarded prizes for English orations and attainments in civic and religious duties. The course of study included instruction in "both the English and German languages; likewise in writing, keeping of common accounts, singing of psalms, and the

true principles of the holy Protestant religion." Twenty-five schools were planned, but probably there were never half that number. The schools lasted only about a decade, as the Germans soon came to feel that this English schooling threatened their language, nationality, and institutions.

### THE SUNDAY SCHOOL MOVEMENT

**Foundations by Robert Raikes.** — A variety of charity institutions quite different from those already mentioned sprang up toward the close of the century under the name of "Sunday Schools." To overcome the prevailing ignorance, vice, and squalor in the manufacturing center of Gloucester, England, Robert Raikes in 1780 set up a school in Sooty Alley for the instruction of children and adults in religion and the rudiments. Six months later he started a new school in Southgate Street, and soon had other schools established. He paid his teachers a shilling each Sunday to train the children to read in the Bible, spell, and write. This charity education, meager as it was, was attacked by many of the upper classes, and was often viewed with suspicion by the recipients themselves. Yet the new movement had warm supporters among the nobility and such reformers as Wesley, and the schools soon spread to London, and then throughout England, Wales, Ireland, Scotland, and the Channel Islands. A Sunday School Society was founded in 1785, and within a decade distributed nearly one hundred thousand spellers, twenty-five thousand testaments, and over five thousand Bibles, and trained approximately sixty-five thousand pupils in one thousand schools.

**Sunday school instruction in America.** — The Raikes system of Sunday instruction was also soon introduced in

America. The first school was organized in 1786 by Bishop Asbury at the house of Thomas Crenshaw in Hanover County, Virginia, and within a quarter of a century a number of schools arose in various cities. In these communities rudimentary education was provided for poor children, and the teachers were usually paid. The chief textbooks used were the speller and hymn-book. Before long, permanent associations were also started to promote Sunday instruction. "The First Day or Sunday School Society" was organized at Philadelphia in 1791, and during the first two decades of the nineteenth century a number of similar societies for secular instruction on Sunday were founded in New York, Boston, Philadelphia, and elsewhere. In 1823 these associations were all absorbed into a new and broader organization, known ever since as the "American Sunday School Union." At the start it published suitable reading-books, and furnished primers, spellers, testaments, and hymn-books to needy Sunday schools at a reasonable rate.

Both in Great Britain and the United States, however, the Sunday schools gradually tended to abandon their secular instruction and become purely religious. At the same time the teachers came to serve without pay and to instruct less efficiently. And the value of the secular teaching was not large at the best, as the work was necessarily limited to a few hours once a week. Raikes and all others interested in these institutions recognized their inadequacy as a means of securing universal education, and regarded them merely as auxiliary to a more complete system of instruction. But while a makeshift and by no means a final solution for national education, they performed a notable service for the times, and helped pave the way to universal education.

## MONITORIAL EDUCATION

**Lancaster and Bell and their societies.** — While philanthropic education started largely in the eighteenth century, some of the schools continued well into the nineteenth. Such was the case with the "monitorial" system, started at Southwark in 1798. This district of London was thronged with barefoot and unkempt children; and Joseph Lancaster, the founder of the school, undertook to educate as many as he could. His schoolroom was soon filled with a hundred or more pupils. In order to teach them all, he used the older pupils as assistants. He taught the lesson first to these "monitors," and they in turn imparted it to the others, who were divided into equal groups. Each monitor cared for a single group. The work was very successful from the first, but Lancaster, attempting to introduce schools of this kind throughout England, fell so recklessly into debt that an organization, known as the "British and Foreign Society," had to be founded in 1808 to rescue his work and continue it on a practical basis.

So successful were the efforts of the Lancasterian society that the Church of England, fearing its non-sectarian influence upon education, in 1811 organized "The National Society for Promoting the Education of the Poor in the Principles of the Established Church." This long-named association was to conduct monitorial schools under the management of a Doctor Andrew Bell, who had experimented with the system in India before Lancaster opened his school. Although they had formed no part of Bell's original methods, the Anglican catechism and prayer book were now taught dogmatically in the schools founded by the National Society. Bell himself proved an admirable

director, and a healthy rivalry sprang up between the societies.

**Methods and influence of monitorialism in England.** — The plans of the two organizations were similar, but differed somewhat in detail. Both used monitors (Figs. 39, 40, and 41) and taught writing by means of a desk covered with sand, but the system of Lancaster was animated by broader motives and had many more devices for teaching. On the whole, monitorial instruction over-emphasized repetition and mechanics in recitation, and consisted of a formal drill rather than a method of instruction, but it was productive of some achievements. Most of the monitorial schools afforded a fair education in the elementary school subjects and added some industrial and vocational training. They also did much to awaken the conscience of the English nation to the need of general education for the poor, and the British and Foreign and the National Societies afforded a substitute, though a poor one, for national education in the days before England was willing to pay for it. Later they were used as avenues through which such appropriations as the government came to make could be distributed.

In 1833 the grant of £20,000, constituting the first government aid to elementary education, was equally divided between the two societies (see Chap. XVIII), and this method of administration was continued as the annual grant was gradually increased, until the system of public education was established. Likewise, in 1839, £10,000 for teacher training was voted to the societies, and was used by the British and Foreign Society for its Borough Road Training College, and by the National Society for St. Mark's Training College. These were followed by several other training institutions, established by each

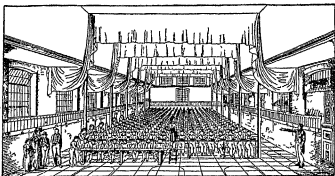


FIG 39. A monitorial school, with three hundred pupils and but one teacher

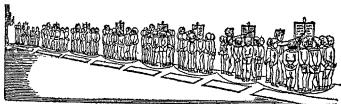


FIG 40 Pupils reciting to monitors



FIG. 41. Monitor inspecting slates

society through government aid. In 1870, when the "board," or public elementary, schools were at length founded, the schools of the British and Foreign Society, with their non-sectarian instruction, fused naturally with them ; but the institutions of the National Society, though transferred to school boards in a few cases, in general came to constitute by themselves a national system on a voluntary basis.

**Spread and influence of the monitorial system in the United States.** — In 1806 the monitorial system began to be introduced into the United States. In New York City a "Society for the Establishment of a Free School," after investigating the best methods in other cities and countries, decided to try the system of Lancaster (see p. 239). This method was likewise introduced into the charity schools of Philadelphia (see p. 247). The monitorial system then spread rapidly through New York, Pennsylvania, Massachusetts, Connecticut, and other states. It is almost impossible to trace the extent of this organization in the United States, but before long it seems to have affected nearly all cities of any size as far south as Augusta (Georgia), and west as far as Cincinnati.

In 1818 Lancaster himself was invited to America, and assisted in the monitorial schools of New York, Brooklyn, and Philadelphia. A dozen years later the system began to be introduced generally into the high schools and academies. Through the efforts of Dr. John Griscom, who had been greatly pleased with the monitorial high school in Edinburgh, a similar institution was established in New York City in 1825, and the plan was soon adopted by a number of high schools in New York and neighboring states. Likewise, the state systems of academies in Maryland and in Indiana, which became high schools after



the Civil War, were organized on this basis. For two decades the monitorial remained the prevailing method in secondary education. Training schools for teachers on the Lancasterian basis also became common.

In fact, the monitorial system was destined to perform a great service for American education. At the time of its introduction, public and free schools were generally lacking, outside of New England, and the facilities that existed were meager and available during but a small portion of the year. In all parts of the country illiteracy was almost universal among children of the poor. This want of school opportunities was rendered more serious by the rapid growth of American cities. "Free school societies," like that in New York City, formed to relieve the situation, came to regard the system of Lancaster, because of its comparative inexpensiveness, as a godsend for their purpose. And when the people generally awoke to the crying need of public education, legislators also found monitorial schools the cheapest way out of the difficulty, and the provision made for these schools gradually opened the road to the ever-increasing expenditures and taxation that had to come before satisfactory schools could be established.

Moreover, the Lancasterian schools were not only economical, but most effective, when the educational conditions of the times are taken into consideration. Even in the cities, the one-room and one-teacher school was the prevailing type, and grading was practically unknown. The whole organization and administration of schools were shiftless and uneconomical, and a great improvement was brought about by the carefully planned and detailed methods of Lancaster. The schools were made over through definite mechanics of instruction, centralized

management, well-trained teachers, improved apparatus, discipline, hygiene, and other features. While the monitorial methods were mechanical, inelastic, and without psychological foundation, and their sway did not last long, they performed a distinct service in developing American education during the first half of the nineteenth century.

#### INFANT SCHOOL MOVEMENT

**Infant schools in France.** — Another form of philanthropic education that came to be very influential during the nineteenth century and has eventually been merged in several national systems is that of the so-called "infant schools." The first recorded instance of these institutions occurred late in the eighteenth century through the attempt of a young Lutheran pastor named Oberlin to give an informal training to the small children in all the villages of his rural charge in northeastern France. This type of training was copied in Paris as early as 1801, but did not amount to much until its revival through the influence of a similar development in England a quarter of a century later. It then rapidly expanded, and in 1833 was adopted as part of the French national system of education. In 1847 a normal school was founded to prepare directresses and inspectors for these institutions, and in 1881 they became known as "maternal schools," and the present type of curriculum was adopted. Besides reading and writing, these schools have always included informal exercises in the mother tongue, drawing, knowledge of common things, the elements of geography and natural history, manual and physical exercises, and singing.

**Owen and Wilderspin in England.** — Quite independently, though over a generation later than Oberlin,

Robert Owen opened his "infant school" in 1816 at New Lanark, Scotland. He was a philanthropic cotton-spinner, and wished to give the young children of his operatives a careful moral, physical, and intellectual training. From the age of three they were taught in this school for two or three years whatever was useful and within their understanding, and this instruction was combined with much singing, dancing, amusement, and out-of-door exercise. They were not "annoyed with books," but were taught about nature and common objects through maps, models, paintings, and familiar conversation, and their "curiosity was excited so as to ask questions concerning them." To afford this informal training, Owen secured a "poor simple-hearted weaver, named James Buchanan, who at first could scarcely read, write, or spell," but who, by following the instructions of Owen literally, made a great success of the system.

But when Buchanan, with the consent of Owen, had been transferred to London to start a similar school, his lack of intelligence reduced the training to a mere mechanical procedure. Unfortunately this London school became the model for Samuel Wilderspin, who was destined to become the leading exponent of infant schools. The schools of Wilderspin, while retaining some of the principles and devices of Owen, were much more formal and mechanical. He thought too highly of "books, lessons, and apparatus," and confounded instruction with education. He overloaded the child with verbal information, depending upon the memory rather than the understanding. Before the child was six, it was expected that he had been taught reading, the fundamental operations in arithmetic, the tables of money, weights, and measures, a knowledge of the qualities of common objects, the habits

of different animals, the elements of astronomy, botany, and zoology, and the chief facts of the New Testament.

Wilderspin's first school was opened at Spitalfields, London, and soon attracted a horde of visitors. He then began lecturing upon the subject throughout the United Kingdom, often demonstrating his methods with classes of children he had taken along, and organized infant schools everywhere. In 1824 an "Infant School Society" was founded and through it several hundred schools were established. A dozen years later an organization for training infant school teachers, known as "The Home and Colonial School Society," was founded, which undertook to ingraft Pestalozzianism upon the infant school stock. While the combination resulted in some improvement of the infant schools, and real object teaching and sense training were more emphasized than they had been, the spirit of Pestalozzi was largely lost. There was too much imitation of the formal instruction of older children, and an evident attempt to cultivate infant prodigies. In this form the infant schools spread throughout Great Britain, and were adopted as a regular part of the English public system, when it was established in 1870 (see Chap. XVIII).

**Infant schools in the United States.** — Similar schools open to all younger children also sprang up in the United States during the first quarter of the nineteenth century. For many years they were nowhere regarded as an essential part of the public school system, and were managed separately, but about the middle of the century they were generally united. In 1818 Boston made its first appropriation for "primary schools, to provide instruction for children between four and seven years of age." These schools were divided into four grades, beginning with the study of the alphabet and closing with reading in the New

Testament. Besides reading, writing, and spelling, sewing and knitting were taught the girls. These primary schools were for a long time under a separate committee, but in 1854 the management was fused into a general city board.

New York started an "Infant School Society" in 1827. This organization opened two "infant schools" for poor children between three and six years of age. One of these schools was located in the basement of a Presbyterian Church and the other in that of a monitorial institution belonging to the Public School Society (see p. 264). The Pestalozzian methods used in these infant schools greatly commended themselves, and in 1830 the Public School Society added them as "primary departments" in all their buildings, but under separate management. A committee was appointed in 1832 to examine the Society's schools and suggest improvements. Upon the recommendation of two of this committee, who had inspected education in Boston, primary schools were established in rented rooms in sufficient numbers to be within easy reach for the young children.

In 1827 three "infant schools" were also founded in Philadelphia and other centers of Pennsylvania through Roberts Vaux. By 1830 the number of infant schools in the state had risen to ten, with two to three thousand pupils. As the numbers would indicate, the schools were largely organized upon the Lancasterian plan. Two years later a model infant school was established in Philadelphia, and in 1834 six others were organized. By 1837 there were thirty primary schools in Philadelphia alone. Infant schools were likewise started in a number of other cities and were everywhere instrumental in introducing into American education a better type of schoolroom, separate rooms for different classes, improved methods and equip-

ment, a movement toward playgrounds, and women as teachers.

### THE IMPORTANCE OF PHILANTHROPIC EDUCATION

Many other types of charity school arose during the eighteenth century both in Great Britain and America, but the chief movements have been described, and sufficient has been said to indicate the important part in education played by philanthropy. The moral, religious, and economic condition of the lower classes had been sadly neglected, and by means of endowment, subscription, or organized societies, a series of attempts was made to relieve and elevate the masses through education. As a result, charity schools of many varieties and more or less permanent in character arose in all parts of the British Isles, the United States, and even France. In many instances the pupils in these schools were furnished with lodging, board, and clothes. The curriculum was, of course, for the most part elementary. It generally included reading, spelling, writing, and arithmetic, while a moral and religious training was given through the Bible, catechism, prayer book, and psalms. Frequently industrial or vocational subjects were taught, and the pupils were apprenticed to a trade or to domestic service. The course was usually formal both in matter and method, but occasionally in the later types drawing, geography, nature study, physical exercises, and games were added, and the more informal methods of Pestalozzi or Froebel were partially employed. Sometimes the training was especially intended for and adapted to children under the usual school age.

These efforts to improve social conditions by means of philanthropic education encountered various sorts of

opposition. Often the upper classes held that the masses should be kept in their place, and feared that any education at all would make them discontented and cause an uprising. The poor themselves, in turn, were often suspicious of any schooling that tended to elevate them, and were unwilling to stamp themselves as paupers. Moreover, the sectarian color that sometimes appeared in the religious training not infrequently repelled people of other creeds or kept the schools from receiving their children. However, this philanthropic education may, in general, be considered a fortunate movement, although its greatest service consisted in paving the way for better things. In contrast to the negative phase of "naturalism," it represented a positive factor in the educational activities of the century. Instead of attempting to destroy existing society utterly, it sought rather to reform it, and when the work of destruction gave opportunity for new ideals, it suggested and even furnished a reconstruction along higher lines. Hence philanthropy in education exercised an important influence in the direction of universal, national, and public training for citizenship.

#### SUMMARY OF THE CHAPTER

In England, during the eighteenth century, there were numerous attempts to provide education for the poor through charity schools. The most important agency for maintaining these institutions was the Society for the Promotion of Christian Knowledge.

Among other organizations, there sprang up a Society for the Propagation of the Gospel in Foreign Parts, which supported schools throughout the American colonies, except Virginia. Charity schools were also maintained in America by various other agencies.

An attempt was likewise made by Robert Raikes of Gloucester, England, to establish Sunday Schools for training the poor to read, and these institutions spread throughout the British Isles and America.

A system of instruction through monitors, developed by Lancaster

and Bell, while formal and mechanical, furnished a sort of substitute for national education in England, and, spreading throughout the United States, paved the way for state support, and greatly improved the methods of teaching

"Infant schools" for poor children also grew up during the nineteenth century in France, England, and the United States, and found a permanent place in the national systems, but they soon became formalized and mechanical

Philanthropic education proved a first step toward universal and national education

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## CHAPTER XIII

### THE TRANSITION IN AMERICAN EDUCATION

#### FACTORS IN THE MODIFICATION OF EUROPEAN IDEALS

**Development of secular interests and religious toleration.** — We may now return to our discussion of American education. It has previously (Chapter X) been indicated how largely the organization of schools in all the colonies was the product of religious and social forces in the European countries from which the inhabitants had come. The occurrences of the Reformation period had colored all the political and educational institutions of Europe, and the migrants to America were thereby influenced in the ideals they brought with them. In the history of American education, therefore, the seventeenth century and to a large extent the first half of the eighteenth may fairly be described as a period of "transplantation of schools"

Yet by the early part of the eighteenth century some new social, political, and economic conditions had already begun to appear, which were bound to find a counterpart in the institutions of education. As the days of the Revolution were approaching, it became evident that European ideals were gradually being modified and that education in America was evolving a type of its own. The general attitude of the colonists toward social life was changing. Little by little the colonies had been spreading inland through the migration of young and adventurous groups seeking new homes, and, in their efforts to master

pioneer conditions, the traditional zest for religion and learning had somewhat declined among them. On the other hand, the original settlements on the coast had been expanding into good-sized villages and cities, and were turning from exclusively agricultural pursuits to trade, industry, commerce, and shipping. As a result, a number of new secular interests were developing in the colonies.

Moreover, as America came to be known as a land of freedom and refuge, the social and religious solidarity of the early colonists was tending to disappear. Various new faiths and peoples — German sects, Baptists, Huguenots, Irish and Scotch Presbyterians — were seeking in the New World an opportunity to worship God in accordance with their own consciences. A large number of indentured servants and deported paupers were likewise finding an asylum here. Laws providing for liberty in worship were enacted, and the identity of the State with the Church was largely broken. A real civil government came to take the place of the old ecclesiastical control. The franchise was gradually extended to all male adults, instead of being limited to the land-owning classes or the members of a single Church, and equality before the law became generally recognized. Religious toleration developed and the balance of political power began to pass into the hands of the common people.

**The transition to democratic education.** — In consequence, the colonial attitude toward education came to be broader and more democratic. The feeling was growing that liberty and political equality could be preserved only through the general education of all. By degrees the country was becoming convinced that it was more essential that schooling in the fundamentals and preparation for citizenship should be provided for the masses, than that

the religious purpose should dominate all levels of education and only aristocrats be trained through higher institutions. This growing movement toward a secularized and universal education was also considerably promoted through the development of schools by philanthropic agencies. As already seen (Chap. XII), the charity schools of the Society for the Propagation of the Gospel, the Sunday schools started by Raikes, the monitorial type of education popularized by Lancaster, and the infant schools of the Home and Colonial Society were all reproduced in America. While these philanthropic schools were so insufficient in number and unsatisfactory in procedure as to prove only a makeshift, they did afford a free education for many who would otherwise have remained ignorant. Through them the habit of establishing a common school, open to all, was largely formed.

These various tendencies toward the development of a public school system became quite marked by the middle of the eighteenth century. But the evolution of broader educational ideals so clearly under way by the end of the colonial period was completely halted through the outbreak of the American Revolution, and the new movement did not reach its climax until the period of "educational awakening" that appeared during the second quarter of the nineteenth century. Thus for about three-quarters of a century, although schools were to some extent declining in efficiency, there may be distinguished a "period of transition" from the aristocratic and sectarian ideals inherited from Europe and the Reformation, to the secular, tax-supported, and state-controlled school system that was gradually developed in the United States. This intervening stage in American education roughly covers

the last quarter-century of colonial life and the first half-century of statehood.

#### DEVELOPMENT OF COMMON SCHOOLS IN THE ORIGINAL STATES

**Constitutional statements concerning education.**— Under the new Federal constitution, various quarrels that had sprung up among the states were composed, and industrial and educational activities crushed by the war were gradually revived. Nevertheless, the constitution of the new nation failed to make any mention of education. Many of the prominent men of the times were the product of the old tutorial type of education, and in the constitutional convention there could have been but scant sympathy for the conception of universal training at public expense. A few of the "fathers" of the new republic were advanced enough to suggest the possibility of national responsibility for education, but even they apparently thought of it as an ideal rather than an immediate outcome. Hence, through the failure to set up any Federal organization, the control of public education, under the Tenth Amendment to the Constitution of the United States, devolved upon the individual state, and each commonwealth was left to organize its own schools and to manage or neglect them as it saw fit.

At first the constitutions of the various states dealt in several different ways with education, and were more or less explicit in their statements according to the prevailing sentiment in each. Their constitutional provisions ranged from complete silence on the subject in New Jersey to the specific declaration in Massachusetts.

Wisdom and knowledge, as well as virtue, diffused generally among the body of the people, being necessary for the preservation of their

rights and liberties, and as those depend on spreading the opportunities and advantages of education in the various parts of the country, and among all the different orders of the people, it shall be the duty of the legislatures and magistrates, in all future periods of this Commonwealth to cherish the interests of literature and sciences, and all seminaries of them, especially the university at Cambridge, public schools, and grammar schools in the towns

Between the extremes of New Jersey and Massachusetts, an intermediate position was taken in the constitutions of Delaware and Georgia, which decreed that the legislature should "provide schools as soon as conveniently may be"; of North Carolina, which prescribed "the convenient instruction of youth . . . at low prices"; and of Pennsylvania, which provided for "the establishment of schools throughout the State, in such manner that the poor may be taught *gratis*." Thus, while Massachusetts alone pointed the way to a definite system of common schools, the original states for the most part indicated some desire to provide ultimately for the education of all.

**Statutory attempts at public education in Virginia.**—Nor was this limited constitutional provision the only evidence of educational development during the transition. Through statutes actual steps toward the formation of a public system were taken in all the early states. Even in aristocratic Virginia suggestions of common schools maintained at public expense began to appear. By the close of the colonial period we have seen that the Old Dominion had made a fair provision for secondary and higher education in various localities, but as yet no real interest in common schools had been shown by the responsible classes. The nearest approach to such institutions was to be found in the "old field" schools, which were built upon lands that had been continuously in

farming use and were being allowed to lie idle until the soil was "rested." Organized by a group of neighbors, schools of this kind were maintained by tuition fees and were not amenable to any control other than the good sense of the parents and pupils. Under the leadership of Thomas Jefferson, however, Virginia now undertook a series of movements looking in the direction of universal education. As early as 1779 that great statesman introduced into the legislature his general scheme for the organization of such a system, which he described as follows:

This bill proposes to lay off every county into small districts of five or six miles square, called hundreds, and in each of them to establish a school for teaching reading, writing, and arithmetic. The tutor to be supported by the hundred, and every person in it entitled to send their children three years gratis, and as much longer as they please, paying for it. These schools to be under a visitor, who is annually to chuse the boy of best genius in the school, of those whose parents are too poor to give them further education, and to send him forward to one of the grammar schools, of which twenty are proposed to be erected in different parts of the country, for teaching Greek, Latin, geography, and the higher branches of numerical arithmetic. Of the boys thus sent in any one year, trial is to be made at the grammar schools one or two years, and the best genius of the whole selected and continued six years, and the residue dismissed. . . . At the end of six years' instruction, one half are to be discontinued (from among whom the grammar schools will probably be supplied with future masters), and the other half, who are to be chosen for the superiority of their parts and disposition, are to be sent and continued three years in the study of such sciences as they shall chuse at William and Mary college, the plan of which is proposed to be enlarged, . . . and extended to all the useful sciences . . .

This comprehensive plan for a system of common schools was, in the face of most discouraging opposition, constantly adhered to by Jefferson, although he did not live to see universal education an accomplished fact.

He did, however, stimulate some movements toward this end. In 1796 the legislature passed an ineffective law whereby the justices of each county were permitted to initiate a school system by taxation, and in 1810 a "literary fund" was established for public education. When, in 1816, this fund had been increased to a million dollars, those in charge of it recommended to the legislature the establishment of "a system of public education, including a university, to be called the University of Virginia, and such additional colleges, academies, and schools as should diffuse the benefits of education through the Commonwealth." This revision of Jefferson's suggestions did not immediately result in any statutory steps toward universal education, except the appropriation in 1818 of \$45,000 from the income of the literary fund to have the poor children of each county sent to a proper school, but it did bring about in 1820 the foundation of the University of Virginia and a generous grant for the erection of a group of buildings.

In the same year, too, the effectiveness of the permissive law for common schools of 1796 and of the appropriation act of 1818 was somewhat strengthened by the division of the counties into districts, among which the appropriation for education of the poor was distributed and managed by special commissioners. But while this law marked a decided step in advance, it was hampered by the same features which in various states continually delayed the establishment of common schools at public expense. In the first place, it was based on the conception of public education as poor relief, rather than universal training for citizenship. It was often viewed with hostility or indifference by the wealthy, who felt that they were paying for that from which they received no benefit, and with pride



and scorn by the poor, who refused to be considered objects of charity. Moreover, the sum distributed (\$45,000) was totally inadequate for over one hundred thousand children, and every variety of school, private as well as public, was subsidized without distinction. The system lacked a strong central organization, and the commissioners, often appointed by the county judges from the classes most opposed to the arrangement, were notoriously inefficient. The teachers also were generally incompetent, as it was practically impossible to persuade college or even academy graduates to undertake the instruction of the poor.

Nevertheless, under this apology for a people's common school, the state went on for a score of years, and there was a steady growth in the literary fund, the appropriations, the length of the school term, and the number of pupils who were willing to take advantage of such opportunities as it afforded. State officials of wide vision, moreover, sought in every way to improve the teaching corps and the defective administration. While the great majority of the school children still attended the denominational, private, and "old field" schools (see p 256), this system of subsidies was educating public opinion for something better. By the close of the first half-century of statehood, while Virginia was not yet ready to establish a complete system of public education, we shall later (see pp 347 ff) find that the ground had at least been prepared for the common school movement, which was beginning to spread throughout the country.

**Similar efforts in other Southern states.** — This advance toward the establishment of common schools in Virginia is typical of the South during the transition. The development in Maryland and South Carolina was very similar

to that of Virginia. Maryland began to move slowly toward universal education by subsidizing education of the poor in 1816, and by the passage of a permissive law for establishing common schools by counties in 1825. South Carolina started an annual appropriation for "free schools" in 1811, but these schools were largely regarded as pauper institutions. Moreover, distribution of the appropriation was very inequitable, since the inland parts of the state, which needed the most assistance, received the least. Yet the amount of appropriation gradually increased, and sentiment for universal education steadily improved. Within the first half-dozen years of statehood, Georgia also began a provision for public education through land endowment and the organization of a state system under the title of the "University of Georgia." While the value of the land was too small to establish a genuine system of public education so soon, before the close of the transition period a permanent school fund had been started and sentiment for public education began to grow.

Likewise in other Southern states admitted after the union had been formed, there was similarly a gradual growth of sentiment for universal education. In every commonwealth there appeared an alliance between far-sighted statesmen and educators and the great middle class of citizens for the purpose of establishing common schools for all white children, and the old ecclesiastical and exclusive view of education was clearly fading. North Carolina, however, which had largely broken from the aristocratic policies of the South (see p. 204), made the most noteworthy progress toward the establishment of public education. Its constitution of 1776 provided for the establishment of schools, and, by 1817, at the request of the legislature, Judge Archibald D. Murphey, a states-

man with broad educational traditions, even formulated an elaborate plan for "a gradation of schools regularly supporting each other from the one in which the first rudiments of education are taught to that in which the highest branches of the sciences are cultivated." Murphey also provided in his plan for the creation of a state board of education to administer the school fund and supervise the schools. This expansive scheme, however, was somewhat visionary and proposed to "maintain," as well as educate, the children of the poor. It failed because it was too impractical for the times, but the suggestions of the Murphey committee brought about in 1825 the establishment of a "literary" (i.e., common school) fund, the income of which was to be used for the support of public schools.

Thus by the close of the first half-century of national existence, while a complete public school system had not actually materialized in any of the Southern states, most of them had begun to create "literary funds," subsidize instruction for the poor, and enact permissive laws for establishing common schools. Except in Virginia and South Carolina, provision had been made for general administration in state, county, and district; and in North Carolina the organization of a system of common schools awaited only a first hint of the great educational awakening that occurred during the second quarter of the nineteenth century. Moreover, most of the larger cities in the South — Baltimore, Charleston, Louisville, Nashville, Memphis, Mobile, New Orleans — had already organized a regular system of public schools, and all of the older commonwealths had made some attempt at supporting a state institution of higher learning, which was virtually the head of a public system.

**Beginnings of public education in New York.** — After the English took possession of New York, we have seen (p. 205) how that territory lapsed into the *laissez faire* support of education. While higher and secondary education was maintained for the upper classes of society, little effort was made to establish common schools. The few elementary schools that existed were either private or maintained by some church or philanthropic society. As already shown (pp. 234 f.), this was the period distinguished for the schools founded by the Society for the Propagation of the Gospel. At the close of the Revolution, however, the various elements of the population had been welded together in the common struggle, and a sentiment for common schools gradually began to prevail over vested interests and sectarian jealousies. As early as 1784 a system of public education was theoretically organized under the management of a Board of Regents, with the title of "The University of the State of New York," though it did not include elementary schools.<sup>1</sup> Five years later lands in each township were set apart for the endowment of common schools, and in 1795 it was enacted :

The sum of twenty thousand pounds (\$50,000) shall be annually appropriated for the term of five years for the purpose of encouraging and maintaining schools in the several cities and towns in this State, in which the children . . . shall be instructed in the English language or be taught English grammar, arithmetic, mathematics and such other branches of knowledge as are most useful and necessary to complete a good English education

This school money was at first apportioned to the counties in accordance with their representation in the

<sup>1</sup> For the significance of this title and for the subsequent development of education in the state during the transition period, see Graves, "History of the State Education Department" in the *Selected Readings* at the end of the chapter

legislature, but it was enacted that thereafter "every payment to the several counties shall be in proportion to the number of electors for members of assembly in each county" In return for this financial aid from the state, the counties were required to "raise by a tax in each town . . . a sum equal to one-half of the sum to be allotted to the same town in the same year." This excellent start toward permanent support of common schools was unfortunately not carried beyond the five-year period, but in 1805 the proceeds from 500,000 acres of land were appropriated toward a public school fund, which was not to be used until the interest reached \$50,000 per annum.

In 1812, when the interest on this fund aggregated more than \$25,000, further organization was enacted whereby a state superintendency of common schools was established. Much progress toward universal maintenance of schools was brought about through the first superintendent, Gideon Hawley. When, after nine years of service, he was removed by political manipulation and the office was thereupon combined with the secretaryship of state, the traditions he had established were continued and each of the secretaries who succeeded to the duties undertook to signalize the educational side of his administration by some marked advance or improvement for the common schools.

But for a generation all the academies and colleges remained under supervision of the Regents, and, except for state appropriations to academies, no one undertook to extend the common school system into secondary and higher education. Moreover, the state encouraged the professional training of teachers in the academies, and the organization of normal schools was thereby delayed. Hence, while New York started the first state system of public education adjusted to the political and social con-

ditions of the new nation, not until the great period of common school revival in the second quarter of the nineteenth century were its people able to develop the system consistently in all directions, and not until 1867 were the schools made entirely free.

Meanwhile, an interesting development of educational facilities was taking place in New York City. By 1805 the opportunities offered in the private, church, and charity schools were seen by certain of the most prominent citizens to be totally inadequate for a city of seventy-five thousand inhabitants, and a "Free School Society" was founded to provide for the children who were not eligible for these schools. The president of this organization was DeWitt Clinton, afterward governor, and in 1806 the first school was, from motives of economy, opened upon a monitorial basis (see p. 239). The state fund (see p. 263) did not reach a sufficient amount to be available until 1815, but special gifts were made to the Free School Society from time to time by the legislature, the city, and private individuals, and there was a rapid increase in the number of its schools during the first quarter of a century. In 1826 the legislature authorized the association to charge a small tuition fee and change its name to the "Public School Society," and through the activities of this organization the ground was prepared for a public school system in New York City. Such a development was also typical of the growth of educational sentiment that took place through quasi-public societies in Buffalo, Utica, Oswego, and several other cities of the state, but these movements did not flower into real public systems until the awakening in public education in the second quarter of the century.

**Development of public education in the other Middle states.** — The rise of school systems in the other Middle

states was likewise gradual. In Pennsylvania, the state system slowly arose through a prolonged stage of "poor schools." As we have seen (p 256), the constitution had provided only for free education of the poor, and at that it was not until some years later (1802, 1804, and 1809) that the legislature passed acts to make this mild provision effective. Even then public institutions were not established to carry out the legislation. Instead of doing this, it was arranged that the tuition of poor children should be paid for at public expense in private, church, and "neighborhood" schools, and the proceeds of the sixty thousand acres of land appropriated for "aiding public schools" went to subsidize private institutions. But while the development of a state system was retarded, the sentiment for universal education and public schools continued to develop, especially in the larger centers. Philadelphia was the first municipality to be converted, and in 1818, under a special act of the legislature, it became "the first school district of Pennsylvania," with the power to provide a system of education on the Lancasterian plan, (see p. 239) at public expense. After three or four years this special legislation was extended to five more "districts," and in 1824 a general law permitting the establishment of free schools in any community was enacted. Two years later, however, this statute was repealed, and it was not until the time of the awakening in public education that a school fund and a state system of common schools were established.

After the formation of the Union, New Jersey and Delaware met with the same kind of hindrance to the development of common schools as did Pennsylvania, and they were somewhat slower in getting a system established. In both commonwealths a state school fund was started early

in the nineteenth century, but it was not distributed for about a dozen years, and then it was used mostly for the education of paupers in subsidized private schools. Some permissive legislation for the organization of school districts and commissioners and the establishment of public schools was also passed, but it accomplished little before the middle of the century.

**Evolution of district schools in Massachusetts.**— In Massachusetts, where the germs of a common school

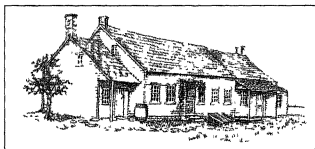


FIG 42 A "kitchen school"

system made their first appearance, the movement toward democracy and public support was continued during the period of transition, but education here met with a serious decline in one respect. As the towns spread out in various directions and access to the school was hindered through poor roads and intervening streams and the fear of being attacked by Indians<sup>1</sup> or wild animals, the settlers in the more distant portions of a town generally came to refuse to vote support for the school until it should in some way be brought nearer to them. Thus the educational interests and resources of a town were gradually divided, and the schools markedly declined in efficiency.

<sup>1</sup> Note the tower on the Dedham school (Fig 30) built as a lookout for the Indians



As a result of this feeling on the part of outlying residents, it was at first arranged that the master should teach in different districts of the town during a portion of the year, and there came to be established what was known as a "moving school." This migration of the teacher to the various districts often necessitated locating the temple of



FIG 43 A colonial "summer school "

learning in some part of a farmhouse, usually the kitchen, and, although in time another room was constructed for the purpose, such an institution was commonly known as a "kitchen school" (Fig. 42). Then, by a later development, when separate schools came to be taught in different places at the same time, the town was said to have a "divided school," and in summer, when only the younger children attended, institutions known as "summer schools" (Fig. 43) were conducted in various parts of the town under the direction of women.

Thus by the middle of the eighteenth century the town system had practically ceased and the era of district systems had begun, though it had been developing for many years before this stage was definitely legalized. Gradually the separate districts secured larger independence in school matters until in 1789 the General Court

(i.e., legislature) of Massachusetts passed a law with the following preamble .

And whereas by means of the dispersed situation of the inhabitants of the several towns and districts in this Commonwealth, the children and youth cannot be collected in any one place for their instruction, and it has hence become expedient that the towns and districts in the circumstances aforesaid, should be divided into separate districts for the purpose aforesaid

Be it therefore enacted by the authority aforesaid, That the several towns and districts in this Commonwealth be and they are hereby authorized and empowered, in town meeting to be called for that purpose, to determine and define the limits of school districts, within their towns and districts respectively

Then followed the statute recognizing all districts as autonomous. After this law was passed, the educational facilities of the towns became more and more divided and inevitably their effectiveness declined. By 1800 the districts received the statutory right not only to manage their own share of the town taxes, but to make the levy themselves. In 1817 they were created legal corporations and empowered to hold property for educational purposes, make and enforce contracts, sue and be sued, and perform other corporate functions. Ten years later they were granted the right to choose a committeeman, who should appoint the teacher and have control of the school property. By such steps small local school districts became a regular feature in Massachusetts and were destined to grow in power and scope. This culmination has well been termed "the high-water mark of modern democracy, and the low-water mark of the Massachusetts school system" (Martin).

The district system did in its earlier stages bind the families of a neighborhood into an organization whose intent

was the most vital of human needs — education, but in the course of time these little units became involved in private and political interests, and had but little consideration for the public good. The principle of local self-government now reached its most extreme and absurd development. The choice of the committeeman, the site, and the teacher caused much unseemly wrangling, and as each received only what it paid in, the poor district obtained but a weak school and that for only a short term. Thus the seed of the common school system and the general support of education continued to germinate in Massachusetts during this period, but the local jealousies and the interference of petty politics prevented the appearance of the harvest for a time. The aristocratic and sectarian aspects had largely disappeared from the schools, but there was a definite deterioration of the product. The development of a genuine system of public education still awaited the efforts of Horace Mann and other reformers, and the common school revival throughout New England and the rest of the country.

**Development in the other New England states.** — The development of public education in Massachusetts during the period of transition may be considered typical of New England in general. Though maintaining its policy of common schools, Connecticut similarly degenerated into a district system, which was recognized by law in 1794, and was destined later to constitute one of the greatest problems during the period of educational development (see pp. 332 f. and 352). Vermont likewise made provision for town and district schools, and eventually established a state fund and school commissioners, but this legislation was soon repealed, and the schools of the state were generally in parlous condition when the educational

awakening began to appear. New Hampshire and Maine also present very similar features. Rhode Island continued its voluntary organization of education throughout the eighteenth century, but in 1800 it enacted a law permitting each town to maintain "one or more free schools." While Providence was the only municipality to avail itself of this permission and the statute was repealed in 1803, a state school fund was created and a basal act for common schools in the state was passed by 1828.

#### SCHOOL ORGANIZATION IN THE NORTHWEST

**Educational attitudes in the three sections.** — It is now evident that by the close of the first half-century of the republic there was everywhere slowly growing up a sentiment for public education. The development of common schools had been greatly hindered in the Southern states by the separation of classes in an aristocratic organization of society, but the superior class had shown no lack of educational interest in its own behalf and through the facilities offered had reared a group of intellectual leaders. Some of these, such as the far-sighted Jefferson, had caught the vision of universal education. The great diversity of nationality and creed in the Middle states, on the other hand, had fostered sectarian jealousies and the traditional practice of the maintenance of its own school by each congregation. Such conditions had proved disastrous to the development of public school sentiment, although Pennsylvania and even more New York had, during the transition period, made quite a start toward the development of a system of public schools.

In both these sections of the country public education was at first viewed as a species of poor relief, and the wealthy were unable to see any justice in being required

to educate the children of others. As a result, the young "paupers" at times had their tuition paid in private schools, and these institutions were not infrequently allowed to share in public funds. The New England states, however, as a result of the homogeneity of their citizens, had early adhered to a system of common schools for all, organized, supported, and supervised by the people. While the efficiency of their education was somewhat crippled during this period by the extensive grant of autonomy to local districts and the growth of petty private and political interests, they had already initiated the unique American product — a public system for all, dependent upon local support and responsive to local wishes.

Such a development of a common schools consciousness was destined, as the result of a great educational awakening, to increase rapidly during the second quarter of the nineteenth century in the Middle and Southern as well as in the New England states. But before describing this further development, it is important to see the effect of the ideals of these three sections when introduced into a new part of the United States by immigrants from the older commonwealths. The new domain referred to was those large tracts of unsettled territory, belonging, according to claims more or less overlapping, to several of the original states, and finally, in settlement of these disputes, ceded for the most part to the Federal Government, with the understanding that the territory should be "formed into distinct republican States"

**Educational attitudes followed parallels of latitude.** — After much discussion and the submission of various proposals, Congress passed the famous "Ordinance of 1787 for the Government of the territory of the United

States northwest of the River Ohio." In passing this act Congress made the following provision :

Religion, morality, and knowledge being necessary to good government and the happiness of mankind, schools and the means of education shall be forever encouraged

The Ordinance of 1787 did not mention any plan whereby this support of schools should be promoted, but an earlier act had pointed the way. By the "Ordinance of 1785" certain lands in the "Western territory" were to be divided into townships, six miles square, and of the thirty-six sections into which each township was subdivided, section sixteen was to be set aside for the support of common schools. Hence, when ten days after the passage of the Ordinance of 1787 a New England organization called "The Ohio Company of Associates," under the leadership of Manasseh Cutler, was granted the right to purchase one and one-half million acres in this territory, Congress provided in the contract of sale :

The lot No 16 in each township, or fractional part of a township, to be given perpetually for the purposes contained in the said (1785) Ordinance.

When Ohio was formally admitted to the Union in 1802, the policy of setting aside lands for school support had been generally recognized throughout the state, and it was in turn extended to Indiana, Illinois, Michigan, and Wisconsin, which were eventually carved out of the Northwest Territory. This endowment from the Federal Government gave a special stimulus to the establishment of schools in all these states during the transition period, although the public system of education in these new states took shape but slowly for various reasons. Incessant warfare with the Indians, the wilderness, wretched roads, and lack of transportation facilities tended to repel

immigrants and leave the country sparsely settled. Such people as came were poor, and the large tracts of school land were slow in acquiring value. In order to attract settlers, too, the lands were often leased at nominal rates or sacrificed for a small price. Moreover, certain social traditions and sectarian jealousies persisted among the immigrants.

As a whole the emigration from the earlier commonwealths followed parallels of latitude, and the northern parts of Ohio, Indiana, and Illinois were occupied mostly by people from New England and New York, and the southern by former inhabitants of Virginia, Kentucky, Tennessee, Louisiana, and other states where the public school system was not yet as well developed. In Michigan, however, because of its northerly location, the great influx throughout the state had come from New England, New York, and northern Ohio. Consequently, the history of public education in the first three of the new states seems to be in each case largely a record of a prolonged struggle to introduce common schools among those of the people who had come from states not yet committed to this ideal, but in Michigan, whose inhabitants had migrated from places where public education was more or less in vogue, the germs of a public system appeared even before statehood was conferred.

The history of common schools in Ohio, Indiana, and Illinois is very similar in general outline. Each one started off by utilizing the sixteenth section for schools, and the state constitution committed it to equal school opportunities for all. But not before the close of the first quarter of the nineteenth century was a system of common schools, with the organization of districts, appointment of school officers, and local taxation provided by the legis-

lature. Even then the acts were largely permissive, the tax was not exacted from anyone who objected, and for some time various laws allowed public funds to be paid to existing private schools for the tuition of the poor. Despite the impulse produced by land endowment, a complete public system, with a state superintendent at the head, was not developed in any of these new commonwealths until after the great wave of common school development began to pass over the country during the second quarter of the century. Michigan, on the other hand, as early as 1817 established a "catholepistemiad," which was to include a university and a system of schools of all grades, and early in the period of common school revival, though dropping its fanciful name, made the projected system a reality.

#### EDUCATIONAL INSTITUTIONS DURING THE TRANSITION

Thus by the close of the transition period a movement toward the establishment of common schools had made considerable progress in all sections of the United States. Freedom in religion and equality before the law were coming into evidence, and the old sectarian and aristocratic forms of education were rapidly fading. The ideal of a tax-supported education open to all, which had been started in New England, was beginning to spread to the rest of the country. Town and district schools were coming to take the place of those organized under private or Church authority, and cities in all parts of the country were laying the foundation of a democratic system of education through schools maintained by quasi-public societies or even through local taxation. Some of the other states were now conducting as efficient an education as Massachusetts, and in New York at least a rudimentary



state administration of common schools had been organized. While the full development of an American public school system was still remote, the nucleus had been developed even before the great common school revival swept through the land.

**Improved organization of elementary education.**—Hence a radical change had become manifest in the character of training transplanted from Europe, and to meet the demands of the new environment, schooling had become much more practical and democratic. All the old institutional types were largely modified and new types were being evolved. First of all, the elementary schools that had sprung up were coming to be somewhat better organized and graded. The old reading and writing schools of the colonies (see p. 208) were now generally united in a single school, and, while these activities were for a time carried on in different rooms, before long they were taught together and the conventional elementary course of the "three R's" began to be formulated. Such a course was crystallized in Massachusetts through the passage of the law of 1789, which united these subjects with a few additions in a standard curriculum for all the schools of the state. The combined institution that arose out of the reading and writing schools became generally known as a "grammar school," and the former "dame" school now became an introduction to it under the name of "primary school." Children attended the primary school from four to seven years of age and were then sent to the grammar school until they were fourteen.

These schools at first existed as separate units in different buildings, but were eventually brought together under one roof and only the preservation of the old names in grammar and primary "departments" indicated that

they had once been distinct institutions. Before they were united the primary school was generally of the old one-room ungraded type, but the grammar school was early divided into four classes and eventually developed an even more refined gradation. Even then, however,

## 21 THE DUNCE.

This is a sight to give us pain,  
Once seen once wished to see again



FIG 44 The dunce cap

From Earle's *Child Life in Colonial Days*

each classroom was taught by its own teacher or teachers and was quite independent of the others, as there was still no principal to co-ordinate the work. In both schools the methods of teaching and of promotion were as yet largely on an individual basis and teachers were frequently changed. Discipline was still harsh, and, while corporal punishment was less often used than in colonial times, innumerable rules of conduct were imposed, and various

methods of disgrace, such as "riding the ass" and "wearing the dunce's cap" (Fig. 44) were continued. Hence, although pedagogical efficiency was somewhat advanced during the transition, few pupils were as yet able to find time or inclination for any training beyond the grammar school.

**New elementary textbooks.**—Likewise, in keeping with the spirit of the times, textbooks greatly increased in number and became less religious and more practical than in the colonial period. Reading books came to contain a



FIGURE 45.—Of the BOY that stole APPLES.

FIG 45

An illustration from Webster's old "blue-back" speller.

large proportion of secular material. The earliest of this type of textbook was Dilworth's *A New Guide to the English Tongue*, which was introduced from England about the beginning of the transition. Besides tables of classified words and a short treatise on English grammar, this book offered a set of moral and historical selections both in prose and verse, a collection of fables with illustrations, and some "forms of prayer for children." *A New Guide* was soon succeeded by a variety of textbooks, combining reader and speller and composed along the same lines, which were produced in America. The most famous of these was the "blue-back" *American Spelling Book* (1783) of Noah Webster (Fig. 45), which

substituted moral readings for all religious matter and American historical and geographical names for English allusions. It furnished an easy method of standardized pronunciation and other attractive pedagogical features, and remained in general use throughout the entire period

A further development of secularized material appeared in a number of readers containing speeches of American

### PRONOUNS



**A man has stolen a bundle, and he is running away with it.**

FIG 46

An illustration from Murray's *English Grammar*

patriots and statesmen, which were intended to be declaimed by the pupils and often afforded instruction in methods of delivery. Among these were such specimens as *The American Preceptor* (1794) and *The Columbian Orator* (1806). The grammatical portion of Dilworth's *New Guide* was likewise amplified in a number of texts written specifically on language study. Webster tried his hand at this in *A Grammatical Institute of the English Language*, which he had prepared in 1784 as a Second Part to his *Spelling Book*. More notable than either, however, was Lindley Murray's historic *English Grammar* (Fig. 46), first published in 1795, which passed through a large number of editions and was in use for several decades. In arithmetic, too, many new text books were written, and Hodder's

work, the only one available in the colonial period, was soon replaced. A number of acceptable texts were produced in this period, such as Nicholas Pike's *New and Complete System of Arithmetic* (1788), but no other was so famous and widely used as Colburn's *First Lessons in Arithmetic* (1821). Thus, as we shall see in the next chapter, was built on the plan of Pestalozzi, and first introduced exercises in mental arithmetic into American schools. It played an important part in making the subject attractive and easier to acquire, and, according to Henry Barnard, "enjoyed a more enviable success than any other schoolbook ever published."

The subject of geography was also introduced and popularized through textbooks during this period. The earliest work was Jedidiah Morse's large manual (Fig. 47), which was of little value to the schools until greatly abridged in his *Elements of Geography* issued in 1795. This book contained a few maps and was probably the best text on the market until William C. Woodbridge, toward the end of the transition, issued his *Rudiments of Geography* (1821). The latter text was amply illustrated and accompanied by an atlas, but even it was encyclopedic in character and furnished little information concerning man's commercial or economic relations. Likewise American history first came into vogue in this period with Davenport's *History of the United States* (1821) and the far better known volume with the same name published the following year by Chauncey



FIG. 47 Morse's  
*Geography*  
The first American  
geography. Size of  
book, 12 mo

A. Goodrich (Fig. 48), of which numerous later editions were published and a hundred and fifty thousand copies sold. These early histories, however, were more largely used for giving practice in reading than for affording a broad interpretation of the country, and they generally contained no maps or illustrations.



FIG. 48 Capt John Smith defending himself from the Indians.  
*An illustration from Goodrich's History of the United States*

**Rise of a new type of secondary education.** — Secondary education likewise met with marked changes in the transition. During this period the Latin grammar schools inherited from England steadily declined in importance, and were largely supplanted by more democratic and practical types of education. The old Latin schools, which were limited for the most part to a classical training and to preparation for college, proved too narrow for the times, and institutions with more extensive functions were demanded. In the Middle colonies, where the people were becoming more concerned in trade and commerce, English grammar schools, with a broader and less aristocratic course, began to spring up. For example, the Grammar School of the City of New York, founded in 1732, claimed to afford instruction in "all Branches of Mathematicks,

Geometry, Algebra, Geography, Navigation, Merchant's Bookkeeping," as well as in writing and Latin.

A more permanent type of institution to furnish this comprehensive and modern program, however, is to be found in the "academies," which, as previously indicated (pp. 168f.), were copied from those of the dissenters in England. The first prominent institution of this kind was that founded through the efforts of Benjamin Franklin



FIG. 49 The first "academy," founded by Benjamin Franklin at Philadelphia in 1749 and later developed into the University of Pennsylvania

at Philadelphia in 1749, which six years later became a college (see p. 284). Franklin wished to inaugurate an education that would fit young men for the various fields in public and private life, rather than just for college and the pulpit; and the Philadelphia academy (Fig. 49), while not excluding Latin, emphasized the study of English, oratory, logic, sciences, history, and civics. Once embodied in this institution, the idea spread rapidly, and within a generation academies, with their broader program, had sprung up in every part of the country.

The creation of such institutions especially appealed to the people of New England. In Massachusetts and other

states the increasing expenses caused by war and the growth of a district system resulted in gradual failure to support the old grammar schools. In spite of mounting fines imposed by law, these institutions had fallen into disuse before the close of the eighteenth century, and their place was being generally taken by academies. The new movement was given a special impulse through the foundation of the two historic Phillips academies at Andover and Exeter and the conversion of the old Dummer Grammar School into an academy (see p. 170). Four more academies were added within the decade, and, to meet the growing needs of secondary education, the Bay State started the custom of endowing academies with wild lands in the province of Maine. This method of foundation was recognized by statute in 1797, and seven academies — four in Massachusetts proper and three in Maine — were then endowed with a township apiece, while subsequently some fourteen more were chartered by the towns and empowered by the state to hold educational funds.

During the first half of the nineteenth century the academies reached their height and became the dominant form of secondary education throughout New England. Similar projects had likewise been carried out in all the other states, both old and new. In New York the first two of these institutions, Erasmus Hall in Brooklyn and Clinton Academy in East Hampton (Long Island) were not chartered by the Regents until 1787, but after that others sprang up rapidly. In the course of the transition over one hundred other academies were founded in New York, and there was a corresponding development in the other Middle states. The number of institutions founded in the South was even larger. Georgia alone had established one hundred and twenty academies before the close



of this period and the rest of the Southern states probably increased this number by more than three hundred. Likewise academy foundations appeared rapidly in the new states of the Northwest, especially wherever New England influence was felt. While the greatest development of these institutions occurred in the period of educational awakening during the second quarter of the century, there must have been about one thousand of them by the end of the transition, and the academy was already being recognized as the prevailing means of secondary education.

**Character of academy training.**—The academy formed a natural bridge from the old aristocratic grammar school to the high school of our modern public system. They were generally incorporated by the state, though administered by a private board of trustees, who were for the most part self-perpetuating. While often started on a church foundation—Congregational, Baptist, Methodist, Presbyterian, Quaker, or German sect—they usually received the benefit of local endowment or subscriptions and were even granted financial aid from the state. They were generally chartered by and required to report to the state, and may be considered a species of semi-state institution. They continued to require attendance at devotional exercises and had a religious atmosphere, but the instruction and observances became largely undenominational in character.

The education offered by the academies was more practical than that of the Latin grammar schools, and, besides furnishing a preparation for college, possessed an intrinsic value. The work was primarily intended to be modern, realistic, and useful, although there were often two parallel courses, one leading to college and the other to life. From the beginning these institutions placed English

studies, mathematics, and "natural philosophy" (or textbook science) on a par with Latin and Greek, and they constantly added new subjects, such as astronomy, botany, chemistry, surveying, navigation, United States and general history, mental and moral philosophy, English literature, declamation, and debating, as they were developed.

The academies also approached the universal feature of modern secondary education in opening their doors to girls. They were not established, as were the grammar schools, solely for male youth. Academies were opened specifically for young women, sometimes bearing the anomalous title of "female academy" or "female seminary," and many others were co-educational and offered as modern and liberal an education for one sex as for the other. In addition to the other courses, however, work in drawing, painting, and embroidery was furnished for the girls. The academies, too, later prepared the way for the establishment of normal schools by offering a training course for teachers. This preparation for teaching was most effective for the times, although it did not offer any pedagogical work but consisted simply of a review and advanced instruction in common school subjects.

**More practical curriculum in the higher institutions.** — During this period also the colleges greatly increased in number. Beside the five colleges (Harvard, William and Mary, Yale, Princeton, and Washington) previously (Chap. X) recorded as foundations of the early period, some thirty-three others were chartered in the course of the transition. In the latter group are to be found such subsequently well-known seats of higher education as King's (1754, now Columbia), Philadelphia (1755, now University of Pennsylvania), Queen's (1766, now Rutgers),

Union (1795), Hamilton (1812), and Hobart (1822) colleges in the Middle States, Providence (1764, now Brown University), Dartmouth (1769), Williams (1793), Bowdoin (1794), Amherst (1821), and Trinity (1823) colleges in New England, and Hampden-Sidney (1776), St. John's (1784), and Centre (1819) colleges in the South.

With the growth of the colleges came a modification in their courses not unlike that of the academies. Old and new alike, they seem to have become more practical and less theological in both aim and actual courses. This change in attitude was undoubtedly due to the growing sentiment that democracy, if it is not to be a failure, must train leaders, and that the education it furnishes should enable them to understand the needs of the people and the government. The times demanded lawyers, doctors, and men of affairs, as well as preachers and theologians, and the colleges began to meet these new demands. Hence the curricula came to include far broader offerings. The emphasis upon Latin, Greek, Hebrew, and theology was lessened, while the work in oratory, logic, and philosophy was stressed, and various branches of mathematics, science, geography, history, and a number of other subjects were added.

King's College first illustrates this point of view through its advertisement in the *New York Mercury* of a greatly enlarged curriculum at the time of its opening in 1754. This announcement stated:

It is further the Design of this College to instruct and perfect the Youth in the learned Languages, and in the Arts of *Reasoning* exactly, of *Writing* correctly, and *Speaking* eloquently. And in the Arts of *Numbering* and *Measuring*, of *Surveying* and *Navigation*, of *Geography* and *History*, of *Husbandry*, *Commerce* and *Government*; And in the Knowledge of *all Nature* in the *Heavens* above us, and in the *Air*, *Water*

and *Earth* around us, and the various Kinds of *Meteors*, *Stones*, *Mines* and *Minerals*, *Plants* and *Animals*, and of every Thing *useful* for the Comfort, the Convenience, and Elegance of Life, in the chief *Manufactures* relating to any of these Things — And finally, to lead them from the Study of Nature to the Knowledge of themselves, and of the God of Nature, and their Duty to him, themselves, and one another ; and every Thing that can contribute to their true Happiness, both here and hereafter

Such a breadth of course may in part be attributed to the influence of a comprehensive scheme of education proposed in a pamphlet entitled *General Idea of the College of Mirania*, which was published about this time in the city of New York. It described the higher education of a mythical country, where "the object also kept in sight was the easiest, simplest, and most natural method of forming youth to the knowledge and exercise of public and private virtue." As previously indicated (p 181), this theoretical course included a most progressive program in all the natural and social sciences of the day, and was reflected in the actual "scheme of liberal education" put into effect in 1756 at the College of Philadelphia, when the brilliant young author of the pamphlet, Dr. Wilham Smith, had become the head of that institution.

The curriculum adopted by the Philadelphia College, in brief, seems to have included not only an extensive reading of the classical authors but an intensive training in all branches of mathematics and in mechanics, physics, chemistry, geology, astronomy, botany, zoology, physiology, ethics, politics, and natural and civil law, as far as these subjects were then known. This course of study was continued there with little change throughout the eighteenth century, and was transferred bodily to the College of Wilham and Mary by Bishop James Madison when in 1777 he was made its president. In fact, these broader

courses introduced in New York and Philadelphia were the forerunners of the comprehensive training generally offered by American colleges in the period of the transition, which became the means of training citizens in forensics, debating, and political leadership. Hence during the transition the colleges may be considered as instrumental in advancing human rights and liberties and promoting the cause of the Revolution and the subsequent development of statesmanship.

**Development of state universities.** — This tendency to bring the work of the colleges into closer contact with civic affairs and real life is likewise revealed in the efforts of the time to transform several of them into state institutions. In the case of at least two colleges — Pennsylvania (1779–89) and Columbia (1784–87) — the legislatures undertook to obtain control and made them serve for a while in this capacity. Likewise the effort of Thomas Jefferson, under his plan for a complete system of public education for Virginia in 1779 (see p. 257), to transform William and Mary into a state college as the culminating level, proved unsuccessful and resulted in his foundation of a new institution later on to embody the idea (see p. 288). The most striking instance of an attempt to replace a college with a university under state auspices, however, is found in the Dartmouth College case decided by the United States Supreme Court in 1819. The decision, which has become a precedent for a host of other cases, is far too long to be quoted in full, but the following summary made by the Court will indicate the issue :

The charter granted by the British crown to the trustees of Dartmouth College is a contract within the meaning of that clause of the constitution of the United States which declares that no state shall make any law impairing the obligation of contracts. The

charter was not dissolved by the Revolution. An Act of the State of New Hampshire altering the charter without the consent of the corporation in a material respect is an act impairing the obligation of the charter, and is unconstitutional and void

But the movement toward broadening and democratizing the colleges did result in the foundation of a number of permanent state universities. Finding that the old institutions could not be transformed, the Southern states and the new commonwealths arising across the Alleghenies began to provide for state institutions of higher education either at the time of framing their constitutions or shortly thereafter. As a result, state universities were opened during the transition in some seven commonwealths — North Carolina (1795), Georgia (1800), Ohio (1804), South Carolina (1805), Tennessee (1807), Indiana (1824), and Virginia (1825). The University of Maryland was also projected, but only its Medical and Law Schools were founded in this period. In each of the new states the foundation of such a university was facilitated through a land endowment from the Federal Government. This practice was started under the special contract of sale made by Congress for the Ohio Company on July 23, 1787. In addition to the reservation of the sixteenth section for common schools already mentioned (see p. 272), it was provided

Not more than two complete townships to be given perpetually for the purpose of a university, to be laid off by the purchaser or purchasers, as near the center as may be, so that the same shall be good land, to be applied to the intended object by the legislature of the state.

On the strength of this endowment Ohio University was opened at Athens,<sup>1</sup> but a further grant of "one town-

<sup>1</sup> Not to be confused with the Ohio State University, founded much later at Columbus

ship in the district of Cincinnati for the purpose of establishing an academy" was also made in 1803 and was eventually applied to the support of another state institution which has acquired the name of Miami University (founded as an academy in 1809 and raised to college rank in 1824). Then the policy of granting two townships of land for a university was extended to each new state as it was admitted to the Union.

**Rise of professional education.** — Thus the function of higher education during the transition became somewhat broader than merely training for the ministry. In fact, special professional departments or schools began to arise sometimes on an independent basis but more often in connection with a college or university. Students of medicine or law were no longer prepared solely in the office of a doctor or lawyer, but often obtained a regular course of training in their professions. Thus schools of medicine were founded during this period at the University of Pennsylvania (1765), King's College (1767), Harvard College (1782), Dartmouth College (1798), University of Maryland (1807), and Yale (1813). Likewise law schools came to be established. The first one was conducted under private auspices at Litchfield, Connecticut (1784), but similar schools on a more enduring foundation soon sprang up at the Universities of Pennsylvania (1790) and Maryland (1812), and at Harvard (1817) and Yale (1824). An independent school of pharmacy was also opened at Philadelphia in 1822. Finally, technical education also began toward the end of the period, and in 1824 the Rensselaer School (now Rensselaer Polytechnic Institute) started its work.

From all these developments in the character of actual institutions, as well as from the advance toward public

education, it is obvious that America had in three-quarters of a century markedly departed from the old aristocratic and narrowly religious conception of the colonial period. The era of universal and democratic education had begun to appear, and the changed social, political, and economic conditions of the times had begun to be reflected in the development of new types of institutions. The period of democracy was approaching, but the awakening during the second quarter of the nineteenth century was needed to evolve the distinctively American system of education.

#### SUMMARY OF THE CHAPTER

As the result of new social, political, and economic conditions, the broader and more democratic "period of transition" in the history of American education arose during the last century of colonial life and the first half-century of statehood.

No mention of education was made in the Federal constitution, but the constitutions of the various states for the most part indicated some desire to provide universal education eventually, and some statutory steps toward the foundation of public systems were taken.

Such were Jefferson's plan for a state system and the subsequent legislative provision in Virginia. Other Southern states, especially North Carolina, passed permissive legislation, furnished appropriations and land endowments, and made various advances toward public education, and the larger cities of the South established their own school systems. Likewise in New York, a state board of education was organized, appropriations and land endowments were provided for public education, and a state superintendency of common schools was established, while in New York City a society arose to promote public education. While Pennsylvania largely used its land endowment for "poor schools," its cities began to set up public school "districts," and even New Jersey and Delaware started a state school fund and permissive legislation for organizing public education. In Massachusetts and New England generally, however, while education became less sectarian and more democratic, the towns retrograded into a "district system" of schools.



In the states carved from the Northwest Territory during this period, section sixteen in every township was set aside for the support of common schools, though public education took shape slowly for various reasons. Emigration followed parallels of latitude, and a prolonged struggle took place in these new commonwealths to introduce public schools among those who had come from states not committed to this ideal.

By the close of the "transition," considerable internal progress had also been made in the schools. The organization of elementary schools had been improved, textbooks had increased in number and become less religious in content, secondary education had been democratized through the rise of academies, a large number of new colleges had been chartered and the curriculum of higher education made more practical, and state universities and professional education had begun to develop.

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## CHAPTER XIV

# OBSERVATION AND INDUSTRIAL TRAINING IN EDUCATION

### PESTALOZZI AND THE METHOD OF OBSERVATION

Having outlined the various phases of philanthropic education and surveyed the development of the common school in America, we may now turn again to the more immediate development of the movements that found their roots in Rousseau. It has been noted how Rousseau's "naturalistic" doctrines logically pointed to a complete demolition of the artificial society and education of the times. A pause here would lead to anarchy. If civilization is not to disappear, social destruction must be followed by reconstruction.

Of course the negative attitude of the *Emile* was itself accompanied by considerable positive advance in its suggestions for a natural training, but this advice was often unpractical and extreme and its main emphasis was upon the destruction of existing education. The happiest educational results of Rousseau's work, therefore, came through Pestalozzi, who especially supplemented that reformer's work upon the constructive side. He was the first prominent educator to develop the negative and somewhat inconsistent "naturalism" of Rousseau into a more positive attempt to reform corrupt society by proper education and a new method of teaching.

**His industrial ideals at Neuhof.** — Johann Heinrich Pestalozzi (1746-1827) was born at Zurich and he was

brought up almost altogether by his mother. Through her unselfishness and piety, and the example of his grandfather, pastor in a neighboring village, Pestalozzi (Fig 50)



FIG 50 Johann Heinrich Pestalozzi

was inspired to relieve and elevate the degraded peasantry about him. He first turned to the ministry as being the best way to accomplish his philanthropic purpose, and later took up the study of law, with the idea of defending the rights of his people, but he was not able to succeed in either profession. Then, in 1769, he undertook to demonstrate to the peasants the value of improved methods of agriculture.

He took up a strip of waste land at Birr, which he called *Neuhof* ("new farm"), but within five years this experiment also proved a lamentable failure.

Meantime a son had been born to him, whom he had undertaken to rear upon the basis of the *Emile*, and the results, recorded in a *Father's Journal*, suggested new ideas and educational principles for the regeneration of the masses. He began to hold that education did not consist merely in books and knowledge, and that the children of the poor could, by proper training, be taught to earn their living and at the same time develop their intelligence and moral nature. Hence the failure of his agricul-

tural venture afforded him an opportunity to experiment with philanthropic and industrial education.

Toward the end of 1774 Pestalozzi took into his home some twenty of the most needy children he could find. These he fed, clothed, and treated as his own. He gave the boys practical instruction in farming and gardening on small tracts, and had the girls trained in domestic duties and needlework. In bad weather both sexes gave their time to spinning and weaving cotton. They were also trained in the rudiments, but were practiced in conversing and in memorizing the Bible before learning to read and write. The scholastic instruction was given very largely while they were working, and, although Pestalozzi had not as yet learned to make any direct connection between the occupational and the formal elements, this first attempt at an industrial education made it evident that the two could be combined. Within a few months there was a striking improvement in the physique, dexterity, minds, and morals of the children.

While the unpractical nature of Pestalozzi soon reduced him to bankruptcy, and the experiment at Neuhof had to be closed within six years, he was there enabled to embody his thoughts on education in the form of a popular story known as *Leonard and Gertrude* (1781). In this work, "Gertrude," a simple peasant woman, reforms her drunkard husband, educates her children, and causes the whole community to adopt her methods. When finally a wise schoolmaster comes to the village, he learns from Gertrude the proper conduct of the school and begs for her continued co-operation. Then the government becomes interested, studies the improvements that have taken place, and concludes that the whole country can be reformed in no better way.

**Beginning of his methods at Stanz.** — In 1798 Pestalozzi was given an opportunity to carry out his philanthropic and industrial ideals in education at Stanz through a home and school for orphans, of which he was put in charge. Here he found it impossible to obtain any assistants, books, and materials, but felt that none of these conventional aids were essential for the work he desired to do.



FIG 51 "Father" Pestalozzi at Stanz. The orphan school in the old Ursuline convent

He sought to instruct the children rather by experience and observation than by abstract statements and words (Fig. 51). This was the real beginning of his teaching through "observation," and, though at Stanz he did further develop his correlation of intellectual with manual training, his observational methods were thereafter destined to be more stressed.

Religion and morals, for example, were never taught by precepts, but through instances that arose in the lives



of the children he showed them the value of self-control, charity, sympathy, and gratitude. In a similarly concrete way the pupils were instructed in number and language work by means of objects, and in geography and history by conversation rather than by books. While they did not learn their natural history primarily from nature, they were taught to corroborate what they had learned by their own observation. About this method he said: "According to my experience, success depends upon whether what is taught to children commends itself to them as true through being closely connected with their own observation. As a general rule, I attached little importance to the study of words, even when explanations of the ideas they represented were given."

In connection with his observational method, Pestalozzi at this time began his attempt to reduce all perception to its lowest terms, "the A B C of observation," as he afterward called it. It was while at Stanz, for example, that he first adopted his well-known plan of teaching children to read by means of exercises known as "syllabaries." These joined the five vowels in succession to the different consonants — "ab, eb, ib, ob, ub," and so on through all the consonants. In a similar way he hoped to simplify all education to such an extent that any mother would be able to teach her children without the aid of a school, and out of the experiments started at Stanz were gradually developed all his educational contributions.

**Further applications at Burgdorf and Yverdon.** — After removing to Burgdorf, he further worked out and graduated his "syllabaries." Language exercises were also given his pupils by means of examining the number, form, position, and color of the designs, holes, and rents in the wall paper of the school, and expressing their observations

in longer and longer sentences, which they repeated after him. For arithmetic he devised charts upon which were placed dots or lines concretely representing each unit up to one hundred. By means of this "table of units" (Fig. 52), the pupil obtained a clear idea of the meaning of the digits and the fundamental processes in arithmetic.

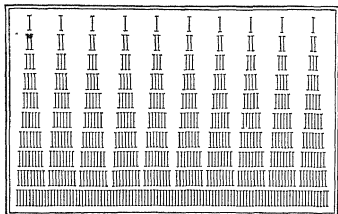


FIG 52 The "table of units" of Pestalozzi, copied by Warren Colburn in the first edition (1821) of the *Mental Arithmetic*

The children were also taught the elements of geometry by drawing angles, lines, and curves, and the development of teaching history, geography, and natural history by this method of observation was likewise continued.

In 1805 he was forced by political changes to transfer his school to Yverdon, where during a period of twenty years he attained the culmination of his observational methods. The "table of units" was further elaborated, and a "table of fractions" was also devised. This device consisted in a series of squares, which could be divided indefinitely and in different ways. Some of the squares were whole, while others were divided horizontally into

two, three, or even ten equal parts. He also developed a "table of fractions of fractions," or compound fractions, in which the squares were divided not only horizontally, but vertically, so that the method of reducing two fractions to the same denominator might be self-evident. Similarly, in order to draw and write, the pupil was first taught the simple elements of form. Objects, such as sticks or pencils, were placed in different directions, and lines representing them were drawn on the board or slate until all elementary forms, straight or curved, were mastered. This also paved the way for writing. The children wrote on their slates, beginning with the easiest letters and gradually forming words from them, but soon learned to write on paper with a pen. Constructive geometry was likewise learned through drawing, and to make the subject concrete, the figures were often cut out of cardboard or made into models.

In nature study, geography, and history the concrete observational work was likewise continued. Trees, flowers, and birds were viewed, drawn, and discussed. The pupils began in geography by acquiring the points of the compass and relative positions, and from this knowledge observed and described some familiar place. The valley of the Buron near at hand was observed in detail and modeled upon long tables in clay brought from its sides. Then the pupils were shown the map for the first time and easily grasped the meaning of its symbols. His ideas on geography, however, were more fully worked out by the scientist, Karl Ritter, who had already been trained in principles similar to Pestalozzi's in Salzmann's school at Schnepfenthal (see p 229). In like manner Pestalozzi's method was applied to music by his friend, Nageli, a noted Swiss composer, who began with the simplest tone ele-

ments and then combined and developed these progressively into more complex and connected wholes.

### PESTALOZZI'S CONTRIBUTION TO EDUCATION

**Observation as a means of natural development.** — It can now be seen that, while Pestalozzi began with the naturalism of Rousseau, he soon departed from him in the development of a concrete method of his own. From the beginning he held that we should always follow "the course laid down by nature." He defined education as "the natural, progressive, and harmonious development of all the powers and capacities of the human being," and declared that the nature of man is like that of a tree in being "an uninterrupted chain of organic parts, the plan of which existed in the seed and root." Accordingly he held, even more consistently than Rousseau, that the unhappy social conditions of the times could be relieved only through developing all children in keeping with natural laws.

He believed, however, that the means of producing such a natural development of the powers of everyone, and so of reforming society as a whole, could be found only through training pupils in "observation." His method for accomplishing this is described in his *How Gertrude Teaches Her Children*, which he produced at Burgdorf in 1801. In general, his plan consisted in analyzing each subject into its simplest elements, or "A B C," and developing it by graded exercises based as far as possible upon the study of objects rather than words. Yet he felt that "experiences must be clearly expressed in words, or otherwise there arises the same danger that characterizes the dominant word teaching — that of attributing entirely erroneous ideas to words." Accordingly in all instruction

he would connect language with "observation." On the basis of this general method, as we have seen, Pestalozzi gradually worked out his special applications to the most common subjects of the curriculum.

**Deficiencies and merits of his methods.** — It is easy to exaggerate the achievements of this almost sainted reformer of Switzerland. Pestalozzi's methods were neither very original nor well carried out. His chief merit lay in developing and making positive the suggestions offered by Rousseau, and in utilizing them in the work of the schools. Even in this he was always groping and never possessed full vision. He did not grasp definite educational principles in a scientific way, but, like Rousseau, obtained his ideas of teaching from sympathetic insight into the minds of children. His writings for the most part record his empirical efforts at an effective training, and are revelations of methods of teaching in the concrete rather than the abstract.

But all these deficiencies are of small import when compared with Pestalozzi's influence upon society and education. In the eighteenth century caste ruled through wealth and education, while the masses, who largely supported the owners of the land in idleness, were sunk in ignorance, poverty, and vice. The schools for the common people were exceedingly few, the content of education was largely limited by ecclesiastical authority, and the methods were traditional and verbal. Teachers generally had received little training, and were selected at random. Ordinarily the pay was wretched, no lodgings were provided, and the teacher often had to add domestic service to his duties, in order to secure food and clothing. For the reformation of such conditions Pestalozzi found his remedy in proper education. Like Rousseau, he keenly

felt the injustice, unnaturalness, and degradation of the existing society, but he was not content to stop with mere destruction and negations. He saw what education might do to purify social conditions and to elevate the people by intellectual, moral, and industrial training, and he longed to apply it universally and to develop methods in keeping with nature.

Pestalozzi's achievements contained the germ of modern pedagogy, as well as of educational reform. It was he that stimulated educationalists, instead of accepting formal principles and traditional processes, to work out carefully and patiently the development of the child mind and to embody the results in practice. From him have come the prevailing reforms in the present teaching of language lessons, arithmetic, drawing, writing, reading, geography, elementary science, and music. In harmony with his improved methods, Pestalozzi also started a different type of discipline. His work made clear the new spirit in the school by which it has approached the atmosphere of the home. He found the proper relation of pupil and teacher to exist in sympathy and friendship, or, as he states it, in "love." This attitude, which appears so fully in his kindly treatment of the poor children at Neuhof and Stanz (Fig. 51), constituted the greatest contrast to that of the brutal schools of the times, and introduced a new conception into education.

**Spread of his methods through Europe.** — The "observational" methods of Pestalozzi and institutions similar to his were soon spread throughout the nations of Europe. While in the beginning but few of the Swiss schools incorporated the Pestalozzian ideas, these reforms soon secured a firm foothold in Germany. The innovations began to appear in Prussia with the opening of the century, and in

1802 Herbart's account of the new methods (see p 379) attracted much attention. By 1808 two of Pestalozzi's pupils had been made directors of public instruction for the state, and the system of elementary education there eventually became known as the "Prussian-Pestalozzian." Before long a similar spirit animated other states of Germany, such as Bavaria and Wurttemberg, and the greatest enthusiasm for the vitalized and interesting methods in all elementary subjects came to prevail everywhere in that country.

In France the spread of Pestalozzianism was at first prevented by the military spirit of the times and the general apathy in education, although General Jullien issued two commendatory reports on his study of the methods at Yverdon, and Chavannes published a treatise on them in 1805. French education, however, was little affected by the Pestalozzian principles until the revolution of 1830, when they rapidly became popular through the efforts of the great minister of public instruction, Victor Cousin.<sup>1</sup> In England the influence of Pestalozzi became felt through the advocacy of object teaching by Charles and Elizabeth Mayo. These educators, however, tended to combine the Pestalozzian methods with those of the infant schools, and the work became very largely formalized. It came to consist of encyclopedic lessons on the arts and sciences, arranged in a definite series and much beyond the comprehension of the young children for whom it was intended. In 1836 the Mayos were instrumental in forming "The Home and Colonial School Society," by means of which the formalized Pestalozzianism was extended through England and America.

<sup>1</sup> For the effect of Cousin's work in America, see Ulrich, *A Sequence of Educational Influences*, Harvard University Press, 1935, pp 45 ff

**Introduction of object study in America.** — Pestalozzianism began to appear in the United States as early as the first decade of the nineteenth century. It was introduced not only from the original centers in Switzerland, but indirectly in the form it had assumed in Germany, France, England, and other countries. The earliest presentation was that made from the treatise of Chavannes by William McClure. By this and other articles, McClure did much to make the new principles known in the United States, and in 1806 he induced Joseph Neef, a former assistant of Pestalozzi, to come to America. Neef maintained an institution at Philadelphia for three years and afterward founded and taught schools in other parts of the country. A large variety of literature describing the new education and translating the accounts of the French and German educationalists was also published in American educational journals. Likewise returned travelers such as Professor John Griscom (see p. 320) published accounts of their visits and experiences at Yverdon and Burgdorf, such lecturers as the Reverend Charles Brooks began to suggest the new principles as a remedy for our educational deficiencies, and reformers, like the Alcotts, began to show the Pestalozzian spirit in their schools.

Pestalozzi's objective methods and oral instruction were applied in a number of subjects by various educators. For example, the methods advocated in arithmetic were introduced into America by Warren Colburn. He spread "mental arithmetic" throughout the country, and in his famous *First Lessons in Arithmetic on the Plan of Pestalozzi*, published in 1821, he even printed the "table of units" (Fig. 52). The more extreme and formalized "Grube method" of arithmetic, which was for the most part based



upon Pestalozzi's principles of reducing every sense perception to its elements, also became very popular in the United States about 1870, and remained a species of fetish for about a generation. The Pestalozzi-Ritter method in geography was early presented in the United States through the institute lectures and textbooks of Arnold Guyot, who had been a pupil of Ritter and came to America from Switzerland in 1848. The promotion of geographic method along the same lines was later more successfully performed by Francis Wayland Parker (1837-1902), who had studied with Guyot, in his training of teachers and in his work on *How to Teach Geography*. Colonel Parker also had several successful pupils, notably Alexis Frye, who produced their own geographies and continued the Pestalozzian tradition almost to the present time. The Pestalozzian method in music was brought into the Boston schools and elsewhere about 1836 by Lowell Mason, who was influenced by the works of Nageli. The most influential propaganda of the Pestalozzian doctrines in general, however, came through the account of the German school methods in the *Seventh Annual Report* (1843) of Horace Mann (see p. 327), and through the inauguration of the "Oswego methods" by Dr Edward A. Sheldon (Fig. 53). Mann spoke most enthusiastically of the success of the Prussian-Pestalozzian system of education and hinted at the need of a radical reform along the



FIG 53 Edward A Sheldon

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same lines in America. The report caused a great sensation, and was bitterly combated by conservative sentiment throughout the country, but the suggested reforms were largely effected. Doctor Sheldon, on the other hand, found his Pestalozzian inspiration in Toronto, Canada, where he became acquainted with the formalized methods of the Mayos through publications of the Home and Colonial School Society (see p. 246). He resolved to introduce the principles of Pestalozzi into the Oswego (N. Y.) schools, of which he was at that time superintendent, and in 1861 secured from the society in London an instructor to train his teachers in these methods. Out of this developed the famous state normal school at Oswego, which became the parent of many similar institutions in other states. As a consequence, during the third quarter of the nineteenth century, Pestalozzianism in the form of "object teaching" came to have a prevailing influence upon teachers and methods in the elementary schools of the United States.

#### FELLENBERG AND INDUSTRIAL TRAINING

**Fellenberg and his agricultural institute at Hofwyl.** — While Pestalozzi continued throughout his life to make new applications of the observational methods, his experiment of combining industrial training with school subjects had to be dropped after he came to Burgdorf. His pupils there came chiefly from aristocratic families and were not obliged to support themselves by manual labor. However, Pestalozzi still hoped to save enough of the income from the school payments of the rich to found a small agricultural school for the poor on this plan and connect it with his "institute," and while this institution was never started, the opportunity for carrying out his

aim came through a friend, Emanuel von Fellenberg (1771-1844).

Fellenberg belonged to a noble family of Berne, but, like Pestalozzi, he believed that an amelioration of the wretched moral and economic conditions in Switzerland should be accomplished by education. To secure the means for an experiment in this direction, he persuaded his father to purchase for him an estate of six hundred acres at Hofwyl, just nine miles from Burgdorf. Here, upon the advice of Pestalozzi, he undertook in 1808 to combine observational methods with industrial training in an "agricultural institute" for poor boys. This work was so arranged that each old pupil, as fast as he was trained, took charge of a newer one as an apprentice, and the school from the first became a sort of family.

The chief feature of the institute was agricultural occupations, including drainage and irrigation, but, from the requirements of farm life, it was natural to train also cartmakers, blacksmiths, carpenters, locksmiths, shoemakers, tailors, mechanics, and workers in wood, iron, and leather. Workshops for these industries were established upon the estate, and the pupils in the agricultural institute were enabled to select a training in a wide range of employments, without neglecting book instruction (Fig. 54). By this means, too, they could support themselves by their labor while being educated. Through the institute also, a considerable number of the pupils were trained to be directors of similar institutions, or to become rural school-teachers.

The work of Fellenberg did not stop there. From the beginning he had felt that the wealthy should understand and be more in sympathy with the laboring classes, and learn how to direct their work more intelligently. Hence

he began very early an agricultural course for land-owners, and many young men of the wealthy classes came to show a striking interest in his deep-soil plowing, draining, irrigation, and other means of educating the poor. But these wealthier youths remained at the institute so short a



FIG 54 Court of the Agricultural Institute of Fellenberg at Hofwyl  
Reproduced from Monroe's *Cyclopedia of Education*

time that he could not extend his ideals very widely. To retain them longer at Hofwyl, in 1809 he opened a "literary institute," which, besides the usual academic studies, used Pestalozzi's object lessons and strove to develop physical activities. Moreover, the pupils in the literary institute had to cultivate gardens, work on the farm, engage in carpentering, turning, and other mechanical occupations, and in many ways come into touch and mutual understanding with the poorer boys in the agricultural institute. The wealthy learned to dignify labor, and the poor, instead of envying those in the higher stations of life, became

friendly and desirous of co-operating with them. Likewise, in 1823, Fellenberg opened a school for poor girls, and four years later he started a "real," or practical school for the middle classes, which was intermediate between the two "institutes."

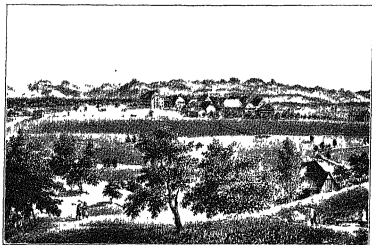


FIG. 55. General view of all the schools and workshops at Hofwyl  
Reproduced from Monroe's *Cyclopedia of Education*

**Influence of Fellenberg upon industrial training.**—The educational institutions of Fellenberg (Fig. 55) proved very successful, and the idea of education through agricultural and industrial training spread rapidly. After the death of Fellenberg in 1844, various types of industrial education everywhere began to supplement academic courses and to extend the work of the school to a larger number of pupils. Thus the tendency of modern civilization to care for the education of the poor, the defective, and the delinquent through industrial and agricultural training has sprung from the philanthropic spirit of Pesta-

lozzi and his practical collaborator, Fellenberg, and has become apparent in all advanced countries.

Industrial institutions rapidly increased in Switzerland, and every canton soon had its own "farm school." Similar training was also introduced into the Swiss normal schools. In Germany industrial or agricultural work was introduced in many of the orphanages and most of the reform schools. Later, industrial education was taken up by the *Fortbildungsschulen* ("continuation schools") of the regular system (see Chap. XVIII). At the reform and continuation schools of France industrial training has long formed the distinctive element in the course. Educators and statesmen of England likewise early commended the work of Fellenberg, and training of this sort shortly found a foothold in various technical and reform schools of that country.

In the United States agricultural and industrial work on the Pestalozzi-Fellenberg basis began to appear about the close of the first quarter of the nineteenth century. Thereafter for a score of years there sprang up a large number of institutions with "manual labor" features in addition to the literary work. The primary object of the agricultural or industrial work in these institutions was to enable students to earn their way through school or college and at the same time secure physical exercise. It was the first serious academic recognition of the need of a "sound mind in a sound body," and did much to overcome the prevailing tendency of students toward tuberculosis and to furnish a sane substitute for college pranks. The first of these manual labor institutions were established in the New England and Middle states between 1820 and 1830, but within a dozen years the manual labor system was adopted in theological schools, colleges, and academies from Maine to Tennessee.

The success of this feature at Andover Theological Seminary, where it was begun in 1826 for "invigorating and preserving health, without any reference to pecuniary profit," was especially influential in causing it to be extended. A "Society for Promoting Manual Labor in Literary Institutions," founded in 1831, appointed a general agent to visit the chief colleges in the Middle West and South, call attention to the value of manual labor, and issue a report upon the subject. Little attention, however, was given to the pedagogical principles underlying this work. As material conditions improved and formal social life developed, the impracticability of the scheme was realized, and the manual labor feature of these institutions was given up. Thus by 1840-1850 most of the schools and colleges that began as "manual labor institutes" had become purely literary.

A further movement in industrial and agricultural education has been found in the establishment of such schools as Carlisle, Hampton, and Tuskegee, which adopted this training as a solution for peculiar racial problems. Likewise the original idea of Pestalozzi, to secure redemption through manual labor, has been embodied in American institutions since 1873, when Miss Mary Carpenter, the English prison reformer, visited the United States. Contract labor and factory work in the reformatories have come to be replaced by farming, gardening, and kindred domestic industries. Moreover, the schools for delinquents and defectives in the New England, Middle Atlantic, Middle West, and most of the Southern states, have come to adopt the Fellenberg training, though without much grasp of the educational principles involved. Finally, there has also been a growing tendency in the twentieth century to employ industrial training or trade education for the sake

of holding pupils longer in school and increasing the efficiency of the public school system.

### SUMMARY OF THE CHAPTER

Pestalozzi was the first prominent educator to develop the negative naturalism of Rousseau into positive reforms

He desired to elevate the peasantry about him, and, failing in other expedients, undertook to accomplish this through a combination of industrial and intellectual training at Neuhof. This training he continued at Stanz, and began the development of his observational methods. In his work at Burgdorf, he was forced to suspend his industrial training, but he further developed his "A B C of observation," and at Yverdon this method reached its culmination.

Like Rousseau, Pestalozzi conceived of education as a natural development of innate powers, and he extended its application to all children. In his method he held that clear ideas could be formed only by means of sense perceptions, and he undertook to analyze each subject into its simplest elements and develop it by graded exercises.

While not original, practical, or scientific, Pestalozzi made education the remedy for corruption in society, and started modern methods in the elementary studies. Pestalozzian schools and methods spread rapidly through Europe and the United States.

The attempt to combine industrial training with intellectual, which Pestalozzi had to give up, was continued by his friend, Fellenberg, in his institutions at Hofwyl. Similar training was developed throughout Europe. In the United States it stimulated the "manual labor" movement, and was later utilized as a solution for racial and other peculiar problems in education.

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## CHAPTER XV

### THE AMERICAN EDUCATIONAL AWAKENING

#### EARLIER FACTORS IN THE REVIVAL

The development of the educational reforms of Pestalozzi and Follenberg in the United States during the second quarter of the nineteenth century occurred during a great period of awakening in public education, and may be viewed as factors in the general movement. It has been seen in Chapter XIII that during the years of transition democratic ideals and secular education had been steadily advancing. In the colonial period Massachusetts had taken the first step toward establishing schools for the general population, and, while educational efficiency in this state had later been somewhat lowered through the rise of a district system, the trend toward universal education had greatly increased and spread to other commonwealths. A dozen states had started school funds, and at least one of them (New York) had established a rudimentary organization of common schools. Moreover, most of the sizable cities had developed a complete public school system of their own. Hence at the close of this period the common school, so typical of American education, seemed about to burst its chrysalis.

The full development of a tax-maintained and state-administered system, however, was still seriously hampered by sectarian jealousies, the conception of public schools as pauper institutions, the unwillingness of the wealthy to be taxed for the benefit of other people's

children, and the development of small autonomous districts. While evident progress had been made in the evolution of public education, there was still much need of expansion and further democratization. The advance toward this consummation now began to appear in a variety of educational, economic, and political movements, and, during the second quarter of the nineteenth century and the decade just prior to the Civil War, the foundations of an American public school system may be said to have been fully laid. The educational awakening that shaped this great institution has often been called "the common school revival." The storm center of its activity naturally appeared first in New England, especially Massachusetts and Connecticut, but similar influences were clearly at work in most other states and inspiring leadership was everywhere manifest.

**Teacher training, journalism, and European reports.** — Even before this educational awakening could strictly be held to have been under way, several individuals and groups seem to have been engaged in preparing for it. During these earlier years, for example, suggestions concerning improved organization of teacher training were published by several persons. As early as 1816 Denison Olmsted, at that time principal of a "union school" at New London, in his Master's oration at Yale College urged that a seminary for the gratuitous training of schoolmasters be opened, but met with little response. Seven years later, James L. Kingsley, a professor in Yale, made a forceful argument in the *North American Review* for a similar proposition. In the same year William Russell, principal of an academy in New Haven, published his *Suggestions on Education*, in which he held that better preparation should be made for teaching through a pro-

fessional school of this kind. In 1825 Thomas H. Gallaudet issued a series of able articles on teacher education, including the organization of an experimental school. Finally, about this time actual attempts at establishing a private normal school were made by the Reverend Samuel R. Hall at Concord, Vermont (1823), Andover, Massachusetts (1830), and Plymouth, New Hampshire (1837).

Likewise educational journals began to spring up early in this period or even a little before. Considerably over one hundred of these publications, appealing to a general, local, or specialized clientele, are known to have been published. In them were presented articles on school-books, the methods of Lancaster, Pestalozzi, Neef, and Fellenberg, the infant and Sunday schools, physical education, European school systems, and a variety of other timely topics. Perhaps the first of these organs was the *Academician*, a small sixteen-page paper published in New York by Albert and John W. Picket between 1818 and 1820. Another publication of the times was the *Teacher's Guide and Parent's Assistant*, issued at Portland, Maine, 1826-1827. A less ephemeral production was the *American Journal of Education*, edited by William Russell from 1826 to 1830, which was continued as the *American Annals of Education* under the editorship of William C. Woodbridge until 1836 and under other editors for three years more. A similar publication known as the *Quarterly Register* was issued at Andover, Massachusetts, from 1829 to 1843 by the American Educational Society. Many educational reformers of this period also conducted professional journals, which will be mentioned when we come to discuss the various leaders themselves.

Much of this material resulted from visits of Americans to Europe and consisted of first-hand reports concerning

education abroad. The first influential report of this kind, *A Year in Europe* by John Griscom, appeared in 1819. Griscom, who was a lecturer before several New York organizations, including the Public School Society (see p. 264), had visited educational institutions in several foreign countries and in his report called especial attention to the Lancasterian monitorial system and its embodiment in the "high school" at Edinburgh (see p. 242). Almost as well known must have been the letters on European reforms, especially those of Pestalozzi and Fellenberg, which were contributed by Woodbridge between 1820 and 1839 to Russell's *American Journal of Education* and his own *American Annals of Education* (see p. 319). But probably the most widely circulated of these documents was the brief report made in 1837 to the legislature of Ohio by Calvin E. Stowe of the Lane (Cincinnati) Theological Seminary on *Elementary Education in Europe*. It afforded a terse description of Pestalozzian reforms in the schools of Prussia and Wurttemberg (see pp. 304 f.), and was soon reprinted by half a dozen other states. Finally, two years later, Alexander D. Bache, the first president of Girard College, Philadelphia, who had gone abroad by commission of his trustees, presented his account of *Education in Europe*.

**Labor unions, popular conventions, and gubernatorial messages.** — Nor was the promotion of common schools limited to the intellectual class. Most forceful proponents of public education were found among the labor groups, which had enormously multiplied as a result of the development of the industrial revolution and the factory system and were vociferous in demanding adequate training and a fairer chance in life for their children. Workingmen's organizations, especially in such large cities as New York,

Philadelphia, Baltimore, and Boston, joined with educators, reformers, and others in insisting that free schools and effective education be furnished them. This privilege they claimed not as mere charity but as a natural right and the most effective means of social reform. "There can be no real liberty," they held, "without a wide diffusion of real intelligence, therefore, the members of a republic should all be alike instructed in the nature and character of their equal rights and duties, as human beings and as citizens" (*Working-Man's Advocate*, New York, March 6, 1830).

Another important factor in the development of public education was that represented in the activities of a large number of popular conventions. These gatherings were called together upon various occasions throughout the period by associations of citizens and teachers, to take action toward furthering tax support of schools and a general system of public education. Upwards of a hundred of these societies were formed and prepared addresses and memorials to the legislatures. The earliest organization of prominence was the Pennsylvania Society for the Promotion of Public Schools, formed at Philadelphia in 1827, whose advocacy helped to effect the ultimate establishment of a common school system in the state and to develop similar movements in other Middle States. Likewise the Hartford Society for the Improvement of Public Schools was founded in the same year and became a model for New England groups. The widest influence, however, was probably that exerted by the Western Academic Institute, organized at Cincinnati two years later, which soon extended its influence into every corner of Ohio and nearly everywhere else throughout the West. Similar efforts appeared in North Carolina, Virginia, and other commonwealths of the South.

A vitalizing effect upon the attitude of legislatures was also produced through messages from a number of broad-minded governors in all parts of the country. These documents all recommended action looking toward the creation of tax support and the promotion of common schools, and were, as a rule, much in advance of the general sentiment of both legislature and people. Messages of this sort were addressed to legislative sessions as early as the first quarter of the nineteenth century by governors in New York, Pennsylvania, Kentucky, and Delaware, but for the most part the tendency did not become noticeable until the decade of the thirties or forties. One of the most famous of these utterances was that of Governor Wolf of Pennsylvania, who greatly promoted the enactment of the first appropriation for public education in that state by his declaration in 1833 "that a system should be arranged that would ensure not only an adequate number of schools to be established throughout the State, but would extend its provisions so as to secure the education and instruction of a competent number of active, intelligent teachers." Governor Campbell of Virginia issued an annual message on the improvement of public education from 1837 to 1849, and Governor A. G. Brown of Mississippi from 1844 to 1848. Similar official messages were issued in numerous other states in the course of the revival.

**Educational activities of James G. Carter.**—The various movements in behalf of public education which we have described indicate the ferment that was going on everywhere. But the most patent of all forces was that exerted by certain outstanding educational leaders. In general, the activities of these conspicuous individuals came later in the awakening, but an influence that appeared rather early in the period was exercised through



the work of James G. Carter (1795-1849). Carter was a practical teacher and wrote continually for the newspapers on the need of a training institution to improve instruction in the public schools. These popular appeals, which he began about 1824, proved very successful. In particular, his constructive *Outlines of an Institution for the Education of Teachers*, which was widely circulated and reviewed, has earned him the title of "the father of normal schools."

After being elected to the legislature, Carter accomplished much by his zeal and skill in parliamentary tactics. Through him a bill was passed in 1826 to reform the decadent system of Massachusetts. By it, each town as a whole was required to choose a regular visiting committee, in place of the ministers and selectmen, to supervise schools, choose textbooks, and examine, certify, and employ teachers. The act was strenuously opposed by many districts, on the ground that it deprived them of their accustomed rights of autonomy, and the following year each district was allowed to choose its own committeeman. The effect of the law of 1826 was largely spoiled by this compromise, but the enactment proved a first step toward centralized supervision and control of schools.

Next, in 1827, Carter made an effort to place secondary education, which had by his time come to be largely dominated by the academies, more under public control and to make it open to all. Through his leadership a law was at that time enacted, requiring each town of five hundred families to support a free English high school (Fig. 68), and every one of four thousand inhabitants to maintain a classical high school, in which pupils could be fitted for college. Seven years later he succeeded in getting a state school fund established from the proceeds

of the sale of lands in the province of Maine and from the state's claims against the Federal Government for military services. By this act the income was distributed only to those towns which were willing to raise one dollar of taxation for every child of school age (four to sixteen years) and to make the returns required by the state. Public education thereby took a long step forward. But his greatest and most fruitful victory was won in 1837 when he managed to procure the passage of the bill for a State Board of Education, after it had been once defeated, by inducing the house to discuss it in "committee of the whole."

#### HORACE MANN, THE EDUCATIONAL STATESMAN

**Mann as secretary of the Massachusetts Board.** — By reason of his merits as an educator, his persistent efforts in behalf of educational reform, and his championship of this particular bill, it was assumed by most teachers that Carter would be appointed secretary of the new board. To their surprise, a lawyer named Horace Mann (1796-1859), at that time president of the senate, was selected for the post, and the choice is now known to have been most fortunate. By both impulse and training Mann (Fig. 56) was suffused with an interest in humanity and all phases of philanthropy and education. He possessed a happy combination of lofty ideals, intelligence, courage, enthusiasm, and legislative experience, which equipped him admirably for leadership. Indeed it was his peculiar fitness that led to the selection. The law proposed for the new Board of Education numerous duties in the way of collecting and spreading information concerning the common schools and of making suggestions for the improvement and extension of public education, but it provided no

real powers. Hence the influence of the Board had to depend in a large measure upon the character of its secretary.

During the twelve years of his secretaryship Horace Mann served the interests of education most faithfully. To awaken people to the needs of public schools, the new secretary at once started upon a campaign throughout the state, and during each year of his tenure made a similar circuit. Besides regular visits he held himself subject to extraordinary calls for educational meetings, lectures, and addresses, and when, after seven years, teachers' institutes were introduced, he constantly served as an efficient lecturer and instructor.

An even more effective means of disseminating his reforms was found through a series of *Annual Reports*. While in these documents practically every important topic of the time is dealt with, his suggestions as a whole maintain a definite point of view and a connected body of practice. They vitally affected school conditions everywhere in New England, and were read with great interest in all parts of the United States. Mann also issued semimonthly a *Massachusetts Common School Journal*, which urged upon school officials, parents, and children their duties toward health, morals, and education.



FIG 56 Horace Mann

Probably the most permanent means of stimulating the awakening and of propagating Mann's reforms, however, came through securing the foundation of the first public normal schools in this country. A devoted friend of Mann's offered to donate ten thousand dollars for the purpose, in case the state would supply a like amount.



FIG 57    The first normal school in the United States    (Lexington, Massachusetts)

Reproduced by permission of E I F Williams from his *Horace Mann*

This generous proposal was accepted by the legislature in 1838. It was decided to establish three of these schools, so located that all parts of the state might be equally served. Within the next two years they were opened at Lexington (afterward removed to West Newton and then to Framingham, where it is now situated), Barre (later at Westfield), and Bridgewater. (See Fig 57.) A professional course of one year was arranged in each school, which might be extended to two, and the work consisted in review of the common branches from the standpoint of teaching, advanced academic subjects, a brief course in the science and art of teaching, and practice work under

supervision. Despite the hostility of conservatives and incompetent teachers, these normal schools, while not largely attended, were a great success from the start.

**Outcome of the attacks upon Mann.** — Because of his enthusiasm in extending and improving the common schools, Horace Mann was for years violently assailed by reactionaries of all types. His controversy with the committee of thirty-one Boston school principals was particularly sharp and decisive. His *Seventh Annual Report* (1843) gave an account of his visit to foreign schools, and especially praised the Pestalozzian (see p 307) instruction without textbooks, the absence of artificial rivalry, and the mild discipline in the Prussian system. The report did not bring the conservative practice of the Boston schools into comparison with those in Berlin, but the cap fitted and the schoolmasters proceeded to answer savagely. After two polemic pamphlets had been issued by each side, the smoke of battle cleared away and it was seen that the leaders of the old guard had been completely routed. A more insidious attack was that led by the ultra-orthodox. The dogmatic religious teaching of the colonial schools had been steadily fading, but many narrow-minded people were inclined to charge its disappearance to the secretary of the new board, whose liberal attitude in religion was well known. Throughout the contest with them, Mann steadily maintained that the Bible might be read without comment in the schools, but that public education should never become sectarian.<sup>1</sup> In the end assaults of every kind were successfully repelled by Mann, and, while these controversies wore him out and probably led to his ultimate resignation, they had

<sup>1</sup> For Mann's Christian standpoint, see Ulrich, *A Sequence of Educational Influences*, Harvard University Press, Cambridge, 1935, pp 79 ff

much to do with making his reputation as a great educator.

**The educational aim, methods, and organization urged by Mann.** — In fact, while Mann's contributions were numerous and important, they were but typical of the awakening that was everywhere taking place in education. This is evident in his educational suggestions and achievements, which are so characteristic of the times. His foremost proposition was that education should be universal, free, and democratic. The poor should have equal opportunities with the rich, and the public schools should furnish education of such a quality that no one would patronize private institutions because of their superiority. As Mann's reforms advanced, he took great pride in stating :

More and more of the children of the Commonwealth are educated . together under the same roof, on the same seats, with the same encouragement, rewards, punishments, and to the exclusion of adventitious and artificial distinctions

To be effective, Mann held that this universal education should have as its chief objective moral character and social efficiency, and not mere erudition, culture, and accomplishments. But he felt, as we might expect, that the moral aim could not be achieved by inculcating sectarian doctrines. In his *First Annual Report* he declared :

It cannot be overlooked that the tendency of the private school system is to assimilate our modes of education to those of England, where Churchmen and Dissenters, each sect according to its own creed, maintain separate schools in which children are taught from their tenderest years to wield the sword of polemics with fatal dexterity

As to methods of teaching, Mann maintained that instruction should be based upon pedagogical principles, and not upon mere authority and tradition. He advo-

cated the word method of reading, in place of the uneconomical, artificial, and ineffective method of the alphabet, and the Pestalozzian object methods and oral instruction were introduced by him. He held that the work should be guided by able teachers, who had been trained in a normal school, and should be imparted in a spirit of mildness and kindness through an understanding of child nature. The teachers ought also to supplement their training and experience by institute meetings.

Mann was, however, mainly a practical rather than a theoretical reformer, and to the material side of education he gave serious attention. He declared that school buildings should be well constructed and sanitary. This matter seemed to him so important that he wrote a special report upon the subject during his first year in office. He carefully discussed the proper plans for rooms, ventilation, lighting, seating, and other schoolhouse features, and insisted that the inadequate and squalid conditions which existed should be improved. He found that in many cases this was the result of the district system, and suggested consolidation of schools as a remedy. In this connection he characterized the statute of 1789, which had authorized the district organization (see pp. 267 f), as "the most unfortunate law on the subject of common schools ever enacted in the state."

**Mann's achievements for education.** — In order that these various reforms might be realized, Mann insisted frequently that no labor or expense should be spared. The progress resulting from his efforts covers a wide range. During his secretaryship the appropriations made for public education in Massachusetts were more than doubled, and the proportion of expenditures for private schools in the state was, in consequence, reduced from

seventy-five to thirty-six per cent of the total cost of education. The pupil attendance enormously expanded, and a full month was added to the school year. Similarly opportunities for secondary education were enlarged. When Mann's administration began, only fourteen out of forty-three towns had complied with the high school law

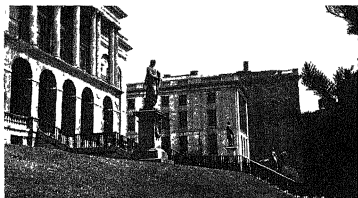


FIG 58 Statue of Horace Mann, in front of the State House, Boston, erected with funds given by friends and school children

Reproduced by permission of E I F Williams from his *Horace Mann*

of 1827, but by the middle of the century fifty new high schools had been established. Likewise the first state institutions for training teachers were opened, and the efficiency of supervision was considerably increased by making the compensation of the town visiting committees, established through Carter, compulsory by law. Thus, under Mann's leadership a practically unorganized set of schools, with diverse aims and methods, was welded into a well-ordered system with high ideals. The experiment of a state administration of schools also proved a great success. It has ever since remained on much the same basis, and has influenced the organization of public



education everywhere. The memory of Horace Mann has been preserved throughout the nation (see Fig. 58)

### HENRY BARNARD, SCHOLAR AND MAN OF LETTERS

**Barnard's part in the educational awakening.**— But there was another important contribution to the awakening made by a New Englander, which was rather different in nature from that accomplished through Horace Mann. Before the reconstruction of the common schools, which was responsible for the best elements in our national civilization, could be at all complete, it was necessary that we should have a better comprehension of what was being done in education elsewhere. American education had for two centuries been undergoing a gradual transition from the institutional types transplanted from Europe in colonial days, and was coming more and more to blossom into a training through people's schools, and it was important that the United States should now become acquainted with what was being accomplished by the other countries that had by this time adopted similar ideals. Such a desirable broadening of vision, we have seen (see pp. 319 f), had begun before the awakening was well under way through the accounts of foreign education that had been published in educational journals or independently. Now the time was ripe for a really capable scholar to bring European achievements within the grasp of all classes of teachers and educational authorities.

This literary exponent of the revival appeared in Henry Barnard (1811–1900), who is fully worthy of a place in the educational pantheon of America. Barnard (Fig. 59) made a brilliant record at Yale for general scholarship, and a position as assistant librarian during his last two years

in college did much to afford him a wide grasp of bibliography. After graduation, he obtained a valuable experience in teaching, and, by traveling extensively in America and Europe, formed a broad acquaintanceship with educational institutions, libraries, galleries, and social conditions in all the leading states and nations. Then,



FIG 59 Henry Barnard

in 1838, two years after his return to Connecticut, he began his part in the awakening as Secretary of the new State Board of Commissioners of Common Schools, and undertook a missionary work similar to that of Mann in Massachusetts

**Barnard's work in Connecticut and Rhode Island.**—Throughout the eighteenth century the schools of Connecticut had been among the most efficient in the country,

but after the land grant income and the surplus revenue deposit had produced a state school fund of such size that the towns were relieved by law of the necessity of levying any taxes, all local effort had become paralyzed through lack of exercise. Another factor in producing this deterioration was connected with the transfer of the management of the common schools from the town to the "school society," a species of small district, almost coterminous with the parish of each Congregational church. The results of this ruinous district policy were revealed in an investigation made by the legislature, which showed that not one-half of the children of school age were attending

the common schools, and that the teachers were poorly trained and supervision was neglected.

Barnard at once urged many reforms, and in his annual reports and in his *Connecticut Common School Journal* made suggestions for a complete plan of public support and control. While more a scholar and literary man than an educational statesman like Mann, he succeeded in getting the legislature to enact a permissive district tax and a general revision and codification of the school laws, and in arousing several towns to amend their educational plans. Although the fundamental difficulty of the "school societies" could not be touched and seems to have been avoided in all his discussions, he forced the conservatives to throw off the mask of indifference and meet him in open opposition. Within four years they managed to legislate him out of office and endeavored to undo most of his reforms.

This dismissal gave Barnard an opportunity to pursue his favorite investigations, and for about a year and a half he was engaged in collecting material for a history of education in the United States. Then he was persuaded by the governor of Rhode Island to become the first Commissioner of Common Schools for that state. While Rhode Island had started a state school fund and a system of education in 1828 (see p. 270) and offered a better educational sentiment and less opposition than Connecticut, both material and educational conditions in its individualistic schools were found by Barnard to be a serious handicap. But, through his assemblages of teachers and parents and his educational treatises, he soon began to convince the people of the unwisdom of district organization, untrained teachers, short terms, irregular attendance, poor buildings and ventilation, and meager equip-

ment. He also continued to publish his collection of educational material through the foundation of the *Rhode Island School Journal*. As a result of his efforts, by 1849, when failing health compelled him to resign, the state no longer regarded willfulness and personal opinion as praiseworthy independence, and he could honestly claim that Rhode Island had at the time one of the best school systems in the United States.

Nor did Barnard's clientele in Connecticut forget him. His followers restored the reforms and constructive work after his departure, and improved upon them. In 1851, they even succeeded in having him recalled virtually to his old duties. He was designated State Superintendent of Common Schools, as well as Principal of the State Normal School, which had been established through the efforts of his adherents. The state had now learned its error in mingling politics with education, and Barnard was able to carry out his projects for the development of public schools without serious molestation. He revised the school code, checked the power of the "school societies," consolidated and simplified the organization and administration of public education, brought about a restoration of the town tax and a more equitable distribution of the school fund, and greatly enlarged local taxation. Through the normal school he sent out a great body of trained teachers.

**Barnard's reports and *American Journal of Education*.** — But Barnard's most distinctive work after his return to Connecticut, as might be expected, was of a scholarly and literary nature. He prepared a series of valuable documents upon foreign education, normal schools, methods of teaching, school architecture, and other topics, and a long report upon *The History of Legislation in Connecticut*

*respecting Common Schools up to 1838*. During his Connecticut superintendency, too, he first suggested that a national professional magazine be published by the American Association for the Advancement of Education, and when that body found itself unable from lack of financial support to pursue such an enterprise, in 1855 he began the publication of the *American Journal of Education* at his own expense. He expected at first to run this magazine for only a limited period, but its existence was continued from time to time, until at length thirty-one large octavo volumes, averaging about eight hundred pages each, had been issued. The *Journal* was issued by Barnard throughout a generation, except for the brief period (1867-1870) while he was serving as the first United States Commissioner of Education. Besides giving nearly all his time to editing it, he sank his entire fortune of \$50,000 in its publication.

This rich treasury of material includes almost every phase in the history of education from the earliest times down to the latter half of the nineteenth century. It furnishes accounts of all contemporaneous systems in Europe and America, reforms of the great educators, descriptions of institutions for the professional training of teachers, school architecture, and a large variety of other themes. While it is always most reliable in its treatises upon foreign education, of even greater value is its practical grasp of educational activities in America from the beginning. It contains the greatest collection of interesting monographs upon the development of ideals and organization in the various states, and gives the most complete description in literature of the educational life of a nation. Such a work proved Barnard the leading representative of the scholarly side of the awakening.

## CALVIN H. WILEY AND CALEB MILLS AS LEADERS

**Wiley and his forerunners.** — But while Mann and Barnard are generally reputed to be the chief inspirers of the common school revival, leadership in this movement was far from being confined to their efforts. We have already seen that several leaders came into the field before their time and many men of distinction in educational progress appear to have been contemporaneous with them or to have become active somewhat later. Nor was this agitation for public education confined to the region of the North Atlantic, as has frequently been implied. Southern states, both the original and those admitted later, and the younger commonwealths of the West give evidence of considerable activity within their borders. As typical of the leadership in these centers, we may instance the educational careers of Wiley in North Carolina and Mills in Indiana.

Calvin H. Wiley (1819–1887) brought public education in North Carolina to the greatest development it reached prior to the Civil War. But the way had been paved for his efforts by the plan for a state school system formulated by Archibald D. Murphey (see pp. 260 f), and by the appeals for the support of common schools repeatedly made by Joseph Caldwell, president of the University of North Carolina, who secured the passage of the first school law of the state in 1839. Wiley (Fig. 60) began his career as a lawyer and journalist, but even at this stage he was outspoken in his advocacy of civic and educational reform. Next he entered the legislature and worked for the establishment of a state superintendency of schools. When this office had been created, he was appointed to it in 1853 by a legislature controlled by the opposite political party, and

served with intelligence and vigor until it was abolished under Reconstruction in 1866. Then he retired with the consciousness of a work well done, nor could he ever be induced to be a candidate for the position after it had been reorganized as a political office.

**Wiley's campaigns and achievements.** — When Wiley entered upon the superintendency, conditions surrounding it were most adverse. Pub-

lic education was greatly handicapped by prejudice, localism, and misinformation, and there was determined opposition to the development of a state system. School officials were irresponsible, teachers were scarce and poorly trained; buildings and equipment were primitive; and textbooks were few and poor. To produce his reforms and develop support for education, Wiley struggled valiantly. Like Horace Mann, he conducted



FIG 60 Calvin H. Wiley.

Reproduced from Noble's *History of the Public Schools of North Carolina*, by permission of the University of North Carolina Press.

continuous campaigns from one end of the state to the other, often at his own expense, to popularize public education and to collect facts and statistics. He was constantly engaged in holding conferences, delivering addresses and lectures, and writing articles. Again following Mann, he issued annual reports, eleven in number, and edited the *North Carolina Journal of Education*. To promote professional interest and discussions, he started a state teachers' association and served as its president and

inspirer. Likewise he co-operated with Braxton Craven, founder of the Normal College (shortly known as Trinity College), in developing its course and securing for it the prerogative of certificating teachers for the state. Finally, to strengthen the work of the schools, he prepared a variety of textbooks, including his famous *North Carolina Reader*.

Thanks to Wiley's strenuous labors, the sentiment of the state toward public schools was largely revolutionized. During his term of office his ideas concerning universal and free education, publicly supported and controlled, obtained substantial adherence among all persons of intelligence. Just before North Carolina seceded from the Union, his annual report showed that in seven years school attendance had increased over fifty per cent and that more than two-thirds of the children of school age were enrolled in the public schools. The average school term was still only four months, but this constituted a large increase. Twenty-seven hundred far better trained teachers had been licensed in the course of a year, and more than \$100,000 was being raised in school taxes by the counties. Three thousand greatly improved school buildings were in use.

While these achievements seem meager enough from a modern point of view, they indicate a marked advance in public education. It must be remembered that population in the South, outside of the cities, was exceedingly sparse and remote from the ordinary channels of communication. New ideas in education necessarily seeped in slowly, and the Southern states, from their aristocratic origin (see p. 195), were naturally reluctant to accept the conception of education as free and universal. Under these circumstances the progress made on common schools under the leadership of Calvin H. Wiley was little



short of phenomenal. Moreover, Wiley's influence was largely felt in the other Southern states, where he had frequently delivered addresses or given advice. Georgia, South Carolina, and even Virginia undertook more or less to copy the reforms of North Carolina, and several commonwealths sought to establish state superintendencies of schools upon the same basis. Wherever established, these official positions were filled by energetic leaders, including such able men as Alexander Dimitry (1847-1851) in Louisiana and Wilham F. Perry (1854-1858) in Alabama. Thus by the outbreak of the Civil War the educational revival was being generally felt in the South.

**Mills and educational conditions in Indiana.** — Caleb Mills (1806-1879) began his educational labors a score of years before the time of Wiley, but he had no one to prepare the way for him and the situation in Indiana was even more difficult than in North Carolina. The state was still in the frontier stage, and had been colonized mostly by people from parts of the South where there was scant sympathy with common schools. The state constitution, adopted in 1816, declared that the legislature should "provide by law for a general system of education, . . . wherein tuition shall be *gratis* and equally open to all," but the legislature had done little to carry out the provision, and even the inadequate enactments it had passed were but seldom enforced. It is not strange, then, that the young reformer found less than one-sixth of the children of school age in a school of any kind, and that the meager funds which had accrued from land endowment (see pp. 271f.) were being shared by private and sectarian institutions. School support had naturally come to rest entirely upon those having children in school to whom rate bills (see p. 347) were issued, and parents were allowed to make

their own bargains with a teacher for tuition and other expenses. In general, as stated by competent authority (J. F. Tuttle), "Indiana rated lowest among free states as



FIG 61 Caleb Mills

Reproduced from Barnard's *American Journal of Education*

to its popular intelligence and means of popular education."

To remedy these conditions, Mills (Fig. 61) devoted nearly half a century of his life. His zeal was a product of his early traditions. He had been educated for the ministry at Andover Theological Seminary and held the typically New England conception of education in a democracy. Upon reading in 1833 of the crying educational needs of the West through a missionary publication, he promptly migrated to Indiana.

Before starting for the scene of his future endeavors, he planned a campaign of enlightenment, and, when he had become thoroughly familiar with the situation, undertook to secure publicity for his reforms through the press. In 1846 and again in each of the five succeeding years, he contributed to the *Indiana State Journal* his famous "Addresses to the Legislature," each of which was signed "One of the People." In the first of these messages, entitled "Education and the Schools of Indiana," he declared that the subject had not for many years received from either the governor or the legislature the attention needed for the best interests of the people. He then presented the humiliating position of the state as to illiteracy and declared that "no more important duty can

devolve upon representatives in their legislative capacity than the devising and perfecting of a wise, liberal, and efficient system of popular education." His other addresses were written in a similar spirit, emphasizing now one phase of his argument and now another.

**Results accomplished by Mills.** — At length Mills had an opportunity to put his principles and suggestions into practice. In 1854, the year after Wiley began his official work, he became state superintendent of public instruction and served for two years and four months. The three reports he issued during this period revealed most advanced views in education even from a present-day standpoint. In them he advocated a free and universal system of education, which should not be confused with schools for the poor, but should be supported by public taxation, taught by adequately paid teachers, supervised by well-trained superintendents, housed in substantial buildings, and equipped with satisfactory furniture, apparatus, and textbooks. He maintained that the cure for existing evils must come through wise legislation and liberal appropriations, but that good schools demand efficient supervision, as well as school funds. Consequently, he endeavored to have teaching and supervisory positions freed from all local, partisan, and sectarian interference.

The strenuous efforts of Caleb Mills met with success. By resolution of the legislature in 1848, a referendum submitted to the people for the establishment of publicly supported schools was favored by a vote of more than three to two. Accepting this mandate of the people, the legislature at its next session passed an optional act authorizing any county to levy a poll tax of twenty-five cents, a general county tax of one mill, and a tax upon insurance premiums for the support of schools. Unfor-

unately it was also voted that the private schools might share in these funds if the township trustees so decreed, and almost two-thirds of the counties decided to take advantage of this feature. But in 1852 a mandatory law was enacted, which provided for public education a general school tax of one mill upon all property in the state. Through this revenue the "rate bills" (see p. 347) could be abolished and the public schools made entirely free.

The achievements of Mills are to be viewed as the most conspicuous of any in the West, but they were not entirely without parallel in other states of that section. A number of leaders became prominent during the awakening for the part they took in the development of school systems for the various states carved from the Northwest Territory. Among them were the early state superintendents, John D. Pierce in Michigan (1836-1841), Samuel Lewis in Ohio (1837-1840), and Ninian W. Edwards in Illinois (1854-1857). Largely through the efforts of Samuel Galloway, Secretary of State and *ex officio* Superintendent of Common Schools from 1844 to 1851, Ohio was enabled to give up its "rate bills" in 1853, and two years later, under the administration of Edwards, public schools were likewise made free throughout Illinois. Like Mills, all of these educational evangelists seem to have been the product of New England influence, being either born and educated in that section and migrating to the West, or brought up in the West among colonists from New England.

#### DEVELOPMENT OF COMMON SCHOOL SYSTEMS

Such, then, were some of the forces at work in the American educational awakening during the second quarter of the nineteenth century and possibly a decade longer. This movement was manifest in, and itself the product of,

a variety of factors — articles, reports, editorials, activities of laboring men, popular conventions, messages of governors, and educational leadership. It succeeded in ushering in a system of universal, secular, and free education, publicly supported and controlled, in improving methods of teaching, organizing teacher education, and generally increasing the efficiency of common schools; and in extending public education upon the secondary and higher levels. Much remained yet to be done during the latter part of the century, but toward the close of the period of awakening our present conception of the American school system became apparent among all thinking people.

**Universal education and secularized schools.** — As opposed to the old aristocratic notion of education and the *laissez faire* development of schools it now came to be generally felt that education should be democratized and that the schools should be made available for all. We have previously seen that Massachusetts was the first state to move in the direction of universal education, but that this tendency was gradually strengthened and extended to the other New England and the Middle states. While, because of its aristocratic view of society and geographic remoteness from progressive trends, such a step was found most difficult for the South, it was evident that even during the period of transition various leaders in that section of the country were undertaking to create systems of public education, and that by the time of the Civil War most of the Southern states had begun moving in that direction. Likewise the new commonwealths of the West were either immediately feeling the influence of colonists from New England or gradually overcoming the resistance of those who had migrated from parts of the

country not yet sympathetic toward common schools. While the democratic theory of educating all the people had not yet been ingrained in America, before the end of the awakening it had come to be accepted by the progressive elements in our citizenry.

The demand for such universal education largely arose from the remarkable intermingling of peoples that took place through immigration. A stratified view of education and a random foundation of educational institutions was bound to give way to the idea of common schools and general training in the light of so many heterogeneous elements in the population. For much the same reason schooling had to become nonsectarian, and the old religious type of institution in the colonies was being generally replaced by a more or less secularized system of education. This change of front did not imply any hostility to religion as such, but simply a shifting in emphasis. Through the introduction of many diverse creeds, tolerance and religious freedom became essential in education and it was recognized that no one church could be allowed to dominate the teaching of the schools. It gradually dawned upon American education that its main purpose was to create an intelligent and trained citizenship, and that the school system should be under State rather than Church auspices.

Even in New England, with all its Calvinistic emphasis upon the rights of each human soul and the need of universal education, the colonial schools were at first quite insistent upon definite religious attitudes and materials. But, as has been indicated (see p. 253), with the incoming of new faiths and the break-up of ecclesiastical solidarity during the last half-century of the colonial period, there came about a waning of sectarian interest

and the adoption of a secular organization and content in education. This transfer of control came to pass readily enough in Massachusetts and other parts of New England, where the congregation and the community were originally one and the governing authorities for both were composed of much the same persons. Hence the transition to secularization seems to have been well under way in this part of the country by the time of the American Revolution. Then, as our State and Federal governments were gradually evolved and the consciousness of civil control awakened, the other commonwealths naturally came to adopt the conception of schools as institutions belonging to and serving the State. This new attitude, we found, was developing to some extent throughout the period of transition, but it required the fertilization of the revival period to bring the secularized schools into bloom in every section of America.

**Disappearance of pauper education and of private school participation in public funds.** — But a universal and secular conception of education required that the schools be free and open to all alike. Toward the complete public support of education, which this would imply, the various states made considerable progress during the awakening, although the battle for free schools was not entirely won by the close of the period. We have seen (pp. 255 f ) that a number of commonwealths provided in their first constitution that the legislature should establish universal education as soon as possible or should at least educate the poor *gratis*, but, outside of the cities, not much was accomplished at this time toward the creation of complete systems of public education. It remained for the revival to extend the principle of maintaining education to all sections and commonwealths. Such a step involved something more

than furnishing education without charge by establishing "pauper schools" or paying for tuition of the poor at private and sectarian schools. This attitude toward free education had been inherited from England and was for a long time defended in aristocratic and conservative parts of the country, but it was not in keeping with education in a democracy and had gradually to be overcome during the awakening.

For many years there was a tendency to permit private and sectarian schools to share in the income of the school funds, which had been established in various states. Even in the time of Horace Mann the adherents of certain creeds urged the establishment of parochial institutions, rather than the maintenance of free secular schools, to furnish general education. In fact, as late as 1853 a provision of the new constitution in Massachusetts to limit the use of state and town moneys to the public schools failed of adoption by a small margin, although two years later it was passed by a decisive majority. Similarly, in the city of New York toward the end of the transition and the early part of the awakening, various attempts were made by sectarian schools to share in the state fund. It was not until 1842 that, in order to put an end to these dissensions, the legislature created a city board of education, which should direct the expenditure of all public school moneys, and even then the Public School Society (held by some to be more or less sectarian) refused for eleven years to surrender its claim to public funds and merge itself in the public system. During the forties, however, such efforts to divide state money came to be generally discouraged, and before the close of the period many of the existing states had amended their constitutions so as to make this impossible. Moreover, before



applying for admission to the Union, practically all new commonwealths adopted a constitutional prohibition of any use of school funds for sectarian or private schools, and this principle was continued and expanded during the period of later development.

**Establishment of the public support of education.** — The consummation of free education, however, demanded a more substantial income than could be derived from land grants or state school funds, which it was at first supposed would suffice for the purpose. While the establishment of these funds fostered community initiative and interest in education and considerably mitigated the most serious opposition to taxation and free schools, the hope that such a source of support would be sufficient seemed more and more illusory as population continued to increase. Before the close of the awakening it came to be widely recognized that the only reliable means of maintaining universal education was to be found in taxation levied directly upon all property or income.

Such a step was undertaken through a moderate state tax or appropriation from the general income. To this a local tax upon the county or district might sometimes be added, but even with such an increase the revenue for some time proved insufficient to make the schools entirely free, and the deficit had consequently to be made up by assessing a charge upon the parents proportionate (*pro rata*) to the number of days in instruction received by their children. The use of these "rate bills," small though they might be, often made it impossible for persons of limited means to send their children to public school without being stigmatized for not paying "rates." Such a policy, too, contributed toward the fostering of private schools. Nevertheless, the practice was not entirely abolished

until, in the later development of public education, these charges were replaced by adequate state and local taxation. In many states "rate bills" continued to be issued even after the time of the awakening.

Throughout this period a battle royal ensued over the use of the property of all for educating the children of all. Conservative and aristocratic citizens felt that general training would make education too common and tend to break down class distinctions; the wealthy and penurious maintained that a democracy might defend the liberties of its people but should not undertake to furnish them with benevolences, and that the state had no more right to tax a citizen for schools than to confiscate any part of his property for the benefit of his neighbors. To these claims public-spirited citizens, liberal statesmen, and educational reformers responded that class distinctions are undesirable in a democracy, that education always tends to promote industries and increase wealth, and that only through making it universal can we hope to produce an intelligent use of the ballot and preserve our free institutions.<sup>1</sup> Preponderant as these arguments for public support of education now seem, its proponents had a fierce and prolonged struggle to overcome tradition, indifference, and vested interest. It took a quarter of a century or more to arouse the intelligence and conscience of the American people, but during the fifties it began to be evident that the friends of public education were winning their battle for support.

<sup>1</sup> However, as Carlton (*Economic Influences upon Educational Progress*, Chapter V) points out, any individual is a focus of many more or less conflicting emotions, demands, and ideals, and, because of his membership in conflicting groups, may be first on one side and then on the other. Moreover, any attempt to classify interest acting for or against the development of a system of tax-supported schools, does not signify that all in one group are to be considered favorable to public schools and all in another opposed, but that as a class one set stands for better facilities and another is opposed.

Legislation for school taxation was gradually developed until the principle was generally accepted and largely carried out in all sections, except for a time in the South.

It would be tiresome and confusing even to outline the progress of taxation for common schools in each of the states, but a few samples may be taken as typical of all. Probably the development with most dramatic features occurred in Pennsylvania. As previously indicated (p. 265), a start toward public support had here been made in populous "districts" through special legislation during the period of transition, and in 1824 a general law was passed which permitted any community to establish free schools, though the enactment was soon repealed. This agitation for free schools was continued for several years by prominent friends of education and a progressive minority in the legislature, and numerous reports, petitions, and resolutions favoring the policy were presented. The next step was achieved when in 1831 the Pennsylvania Society for the Promotion of Public Schools (see p. 321), after demonstrating the ineffectiveness of the "pauper school" law in a series of memorials, succeeded in having a state school fund established by the legislature. This fund was to be provided through moneys accruing to the state from various sources, but the needs of the common schools would not permit them to wait until it had all been collected, and, after a running fight of three years, the proponents of public support succeeded in getting the legislature to anticipate accumulation of the fund by an immediate appropriation from the state treasury.

Accordingly, in 1834 there was passed "an act to establish a general system of education by common schools," which among other features appropriated \$75,000 per annum for public education and permitted districts to

share in it provided they voted to levy a local tax. The victory was largely won through the influential utterances of a broad-minded and energetic governor, George Wolf (see p 322), and the legislative activities of the wise senator introducing the bill, Samuel Breck, who had migrated to Pennsylvania from Massachusetts. The new statute was hailed with especial enthusiasm in the northern counties of the state, settled mostly by New Englanders, and in the western portion, with its large element of Scotch-Irish population and freedom from class distinctions, but, while the law was only permissive, it was bitterly opposed in the central, southern, and south-eastern sections, where the German sects feared that their own parochial schools would be replaced and the conservative inhabitants of "old Pennsylvania" were unwilling to be taxed to educate the children of other people.<sup>1</sup> A vigorous campaign to repeal the appropriating act was waged, but at the next session of the legislature just when all seemed to be lost, its opponents are reported <sup>2</sup> to have been overwhelmed through a meteoric speech delivered by Thaddeus Stevens, native of Vermont and graduate of Dartmouth College. This eloquent and caustic oration cannot be quoted in full, but one brief extract may give its general flavor.

Many complain of the school tax, not so much on account of its amount, as because it is for the benefit of others and not themselves. This is a mistake. It is for their own benefit, inasmuch as it perpetuates the government and ensures the due administration of the laws under which their lives and property are to be protected. Why do they not urge the same objection against all other taxes? The industri-

<sup>1</sup> See footnote on p 348

<sup>2</sup> Some doubt has been expressed as to whether Stevens actually delivered this speech and as to how far it affected the result, but it is certainly an excellent speech and represents the sentiments of the triumphant element in the legislature

ous, thrifty, rich farmer pays a heavy county tax to support criminal courts, build jails, and pay sheriffs and jail keepers, and yet probably he never has had and never will have any direct personal use for either. He never gets the worth of his money by being tried for a crime before the court, allowed the privilege of jail on conviction or receiving an equivalent from the sheriff or his hangmen officers!

While Governor Wolf was defeated for re-election in large part because of his advocacy of common schools, the principle of complete public support had now been established, and "rate bills" became a thing of the past. A greatly improved school law was passed with little opposition the next year (1836), and educational legislation has ever since proceeded along the lines thereby laid down. Among other things this act provided an increase of the annual appropriation to \$100,000, and the following year the new governor surprised everyone by recommending that it be raised to \$400,000. The legislature demurred and reluctantly compromised upon two thirds of the increase, but in 1838 voted the full amount. Five years later, owing to a financial depression, the annual appropriation was cut to \$250,000, and a period of temporary falling off in support and efficiency followed. In 1848, however, the permissive feature of the common school law was abolished and the nearly two hundred districts still refusing to maintain public schools were thereafter required "to levy and assess a tax to enable them to receive the state appropriation." Moreover, through the establishment of county superintendents under the revised school law of 1854, the payment of local taxes was greatly stimulated, and the amount of the state appropriation was decidedly advanced before the outbreak of the Civil War.

In this tortuous fashion Pennsylvania embarked upon public support of education during the awakening. The

development in the other Middle states was similar. In New York, for example, the common school fund, created in 1805 (see p. 263), was by 1827 enormously increased through the addition of the proceeds from bank stock, the sale of state lands, quit rents, and fees of various sorts, and again a decade later through the moneys assigned the state from the United States surplus revenue. But even when town and district taxes had been added to the income of the state fund, there was not sufficient support for the common schools without the rate bills, and throughout the awakening strenuous efforts were made to get rid of such a charge by means of a state tax. A referendum to the people under the act of 1849 was carried by a three-to-one vote, only to be reversed the following year by a small majority. Two years later, by the passage of a compromise bill, the schools were declared to be free for all pupils between five and twenty-one years of age, and an annual state tax amounting to \$800,000 was provided. In 1854 and 1857 this appropriation was substantially increased through millage taxation, although it was not until 1867, in the period of later development, that the rate bills were completely abolished and public schools became free everywhere in New York.

A like development gradually took place throughout New England. In tracing the reforms of Mann and Barnard we have seen how markedly the taxation and appropriations for common schools increased as a result of their labors. While Connecticut and Rhode Island failed to abolish rate bills until several years after the Civil War, three of the states in this section — Massachusetts, Maine, and New Hampshire — had made their schools entirely free before the end of the revival, and Vermont was able to do so in the early years of the next period.

Similarly in North Carolina Wiley succeeded in raising the common schools "from a position of beneficence to a class to that of a fundamental interest of all the state" by stimulating an increase in taxation, and this enlarged support was to a certain extent copied by the rest of the South. Likewise the advocacy of taxation as a means of support for public education by such men as Mills in the Western states (see pp. 341 f.) yielded concrete results in the form of financial legislation during this period. Rate bills were abolished in Indiana by 1852, Ohio acted the next year, and Illinois in 1855. In fact, while the efforts to get rid of rate bills and secure free schools were not crowned with complete success in either North or South before the later years of the nineteenth century, the battle was being won in every section of America during the awakening.

**State, county, and city control of education.** — Almost concurrently with public support, the state control of education developed during the awakening. The educational prerogative of the state, once admitted, could not well be limited to making laws or collecting and distributing taxes, but had logically to be extended to the administration of education itself. If the state were to be required to support schools, it was under equal obligation to see that the money was spent to advantage and that the schools were properly supervised and directed. This involved the creation of some agency for the purpose, and eventually resulted in the appearance of a state board of education and a chief state school official with various powers in all forty-eight commonwealths. At first these officials were concerned with merely statistical and clerical duties, but before long their work came to include important administrative and supervisory functions in education.

The process of establishing a state office was naturally tortuous and slow, since the American people had, from their previous experiences with autocracy, come to distrust any form of centralized power. Moreover, there was as yet no model in city administration for them to follow in creating a central office of this kind, and schools had generally been associated with some private control, sectarian or philanthropic. Nevertheless, we have seen (p. 262) that in crude form this step was taken by New York early in the transition, when in 1784 it created the Board of Regents. Likewise, before the end of this period, in 1812 it appointed a "superintendent of common schools" (p. 263), to guard and direct the use of its school fund and to supervise and report upon the work of the public schools of the state, but, owing to political complications, it abolished the superintendency as a separate office in 1821.

No other state set up a chief school official before the time of the common school revival, though several of them — Georgia (1786), Virginia (1810), Michigan (1817), North Carolina (1825) — established a rudimentary state educational body, which has continued to the present day and been gradually improved. During the awakening, however, all but four or five of the commonwealths then in the Union either created a state school officer upon an independent basis, or, as more often happened, vested educational functions in the secretary, treasurer, or comptroller of the state *ex officio*. In many instances they shifted from one policy to the other and then back again.

As we saw in discussing the educational activities of Carter, Mann, and Barnard, some of the New England states — Massachusetts (1837), Connecticut (1838 and 1851), and Rhode Island (1843) — established an independent central authority under various names and



retained their organizations with little change. Pennsylvania, on the other hand, started its state system in the foundation act of 1834 with a general superintendency under the secretary of the commonwealth, and not until 1857 was the work made absolutely independent under a regular "superintendent of public instruction." In the South, with the exception of North Carolina (1853-1866), most of the states at first selected some existing official to perform the duties, while the new commonwealths of the West, such as Indiana (1854-1857), generally created a separate office in the beginning. Ohio, however, retrograded from its independent superintendency of common schools, which existed from 1837 to 1840, to an *ex officio* management under the secretary of state, and then restored the separate office under the title of "state commissioner of common schools" in 1853.

During the last decade of the awakening the tendency to create a distinct office rapidly increased, and by the end of the period twenty-one states had regular officials for school administration, while ten were still assigning this function to state officers primarily engaged with other duties. A dozen or more of the commonwealths had also created state boards of education, composed mostly of *ex officio* members.

Likewise in the course of the awakening a dozen of the states established county superintendencies, and in several instances, especially in Pennsylvania under the law of 1854, these officials became most influential in promoting the development of common schools. Even more than in the case of the state, however, superintendents for the county were at first employed to care for school lands and school funds after the lands were sold and were often on an *ex officio* basis, although they gradually assumed real profes-

sional duties and became independent officials. As with the state superintendency, too, during this period the county office was in many instances abolished, supplanted by a different sort of administration, or combined with some other function. New York, in particular, made several changes during this period. In 1839 a crude type of county supervision was undertaken through the appointment of unsalaried county boards. Two years later it was arranged to have appointed in their place a "deputy state superintendent" for each county, but in 1843 these officials were replaced by "county superintendents." Finally, in 1856 the county superintendents themselves gave way to "school commissioners," one for each assembly district. Their work, in turn, was replaced half a century afterward by a more nearly efficient type of intermediate supervision under "district superintendents."

During the awakening also, the schools in large cities began to be unified under one management. It was not until somewhat later that the school districts within these cities became completely subordinate to the central management and the term "ward schools" came to express a species of semi-independence, but within this period a number of cities besides those which had done so during the transition, established a distinct system of education of their own. In all these city systems, the organization likewise became more fully developed, and superintendents of schools began to be appointed to take charge of them. In 1837 a school superintendency was created in Buffalo and in Louisville, but the incumbent was at first a layman and received no salary. It remained for Providence to employ the first professional and full-time superintendent in 1839. Springfield followed the example in 1840, New Orleans in 1841, and Rochester in 1843, and several other

cities soon took the step. By the end of the awakening the school systems in twenty-six urban centers were being administered by superintendents, although the great increase in the number of these officials did not come to pass until the next period of development.

#### IMPROVEMENT OF MATERIAL AND EDUCATIONAL FACILITIES

**Better buildings and equipment.** — During the awakening also a marked improvement took place in school buildings and equipment. Until then there had been little change from the earliest days. Throughout the transition, except in the cities, the old log cabin, or at best the "box" type of construction, still prevailed. The average schoolhouse was never completely planned, but was built on the basis of a rough sketch. Its walls and ceiling were unlathed and unplastered, and its roof was generally leaky. It ordinarily had two or three windows on each side and a single door at the front (Fig. 62). The furniture generally comprised long home-made wooden benches, rude and rickety, on three sides of the room, with rough-hewn desks in front of them (Figs. 63 and 64). Little attempt was made at ventilation; heat was furnished by an unjacketed stove; and fuel was scarce and generally consisted of wood. Blackboards were just beginning to come in, and globes and maps were very rare. A poor quality of ink was in use, but steel pens, while invented early in this period, were not yet commonly used.

The situation seems to have seriously disturbed all educational leaders and was vigorously attacked by them. Mann and Barnard produced special reports on school architecture and proposed reforms, while Wiley and Mills both effected some development in the type and facilities



FIG 62 An old-time district schoolhouse



Older pupils' bench



Smaller pupils' bench.

FIG 63

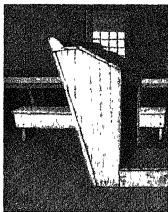


FIG 64 The master's desk

Figs 62-64 reproduced from Johnson's *Old-time Schools and School-books*

school buildings throughout their states. In the rural districts improvement was slow and not much change was made during the awakening, but the cities before long showed marked advances. By the close of the period the elementary schools in many large centers had come to be housed in an entirely new type of building with ten or a dozen classrooms, an assembly hall, and a principal's office. Every classroom had a separate desk and chair for each of the fifty or sixty pupils, and was adjoined by a small black-room. Blackboards, globes, and maps became a regular part of the equipment, and in the course of the period steel pens began to be introduced. Some of the buildings were rather ornate in architecture and fairly adapted to their purpose, but playgrounds, gymnasiums, recitation rooms, shops, cooking and sewing rooms, libraries, and other modern equipment were almost entirely lacking at later times.

**Developments in grading and textbooks.** — As might be expected from the increased number of classrooms, elementary schools entered on a final stage of development in grading their courses of study. The work came to be divided by years, and all the larger schools held the various grades in separate rooms. The much criticized *ninth Annual Report* of Horace Mann (see p. 327), which recommended introducing the graded organization of Prussian schools, was perhaps most influential in bringing this about, and when, toward the close of the period, the district school (see p. 247) came to be merged in the grammar school as a primary department under the same principal, the present-day eight-year elementary system, with a teacher for each grade, became complete.

Textbooks in all subjects taught in the elementary school also greatly increased in number and were graded

and improved during these years of common school revival. This proved the formative period for the writing and manufacture of that unique product, the American schoolbook, and there has been a steady advance in the quality of textbooks ever since. The specimens of elementary texts that have survived from the days of the awakening, while clearly revealing the picturesqueness and charm that always cling to antiques, indicate that a marked advance had been made over the primitive schoolbooks of the colonial or even the transition period. Webster's blue-backed spelling-book, for example, was in one form or another still used throughout most of these years, but it had largely lost its vogue in New England and New York long before the Civil War and had been replaced by a number of spellers that gave more attention to the usefulness of their reading matter, the pedagogy of their presentation, and the attractiveness of their illustrations and general appearance.

Primary reading-books, which had up to this time been little known, were now issued in great numbers throughout the awakening. These were, as a rule, well adapted to the young mind and were profusely illustrated. They included such works as Gallaudet's *The Child Picture Defining and Reading Book* (Hartford, 1830) and Mandeville's *Primary Reader* (New York, 1849). Readers for more advanced pupils, containing selections for declamation, likewise became numerous during this period. Among those especially notable were John Pierpont's *The National Reader* (Boston, 1827), which contained some highly moral lessons and considerable material on natural history, and Lovell's *The Young Speaker* (New Haven, 1844), which furnished illustrations to "inculcate the art of graceful and eloquent gesture." More famous

and more widely used than any of these readers, however, was the series published by William H. McGuffey at Cincinnati (Figs 65 and 66). His *First* and *Second Reader* appeared in 1836, his *Third* and *Fourth* the next year, and the *Fifth* four years later, and then in 1851 the material was added to and developed into six volumes. These



FIG 65



FIG 66

Illustrations from McGuffey's *Eclectic First* and *Third Readers* respectively. Reproduced from the Miami University Bulletin, by permission of H. C. Minnich.

books were frequently revised and in general use to the close of the century. They furnished moral precepts and rules of conduct for hundreds of thousands, and helped establish grade organization in the public schools.

A variety of other improved textbooks also appeared. *The Little Grammarian* (1829) and Pond's revision of *Murray's Grammar* (1835) furnished many pictures illustrating the parts of speech and their use, and contributed toward making a dry subject interesting. Colburn's works on arithmetic were increased in size and number, and came to serve as models for many subsequent books, which used pictures and problems as a means of motivation. In 1835 Joseph Ray began to publish his celebrated textbooks on arithmetic, which combined written methods

with the mental work of Colburn, and, passing through many revisions, were long in general use. In geography Morse's books came to be supplanted by a number of much more attractive works, such as Emma Willard's *Geography for Beginners* (1826), Woodbridge's *Rudiments of Geography* (1830),<sup>1</sup> and the various geographies by Samuel G. Goodrich ("Peter Parley"), issued between 1829 and 1845. At first these texts were accompanied by a flimsily constructed atlas, but were soon enlarged



FIG 67 Bridges in Chili

Illustration from Woodbridge's *Rudiments of Geography*

to quarto size and included maps of their own. The various textbooks on geography and the guide for teachers issued by Arnold H. Guyot on the Pestalozzi-Ritter basis (see p. 307) came later, although that author began his lectures as inspector in Massachusetts and professor at Princeton toward the end of this period. Davenport's and C. A. Goodrich's (see Fig. 48) works on *United States History* were also supplemented by more attractive textbooks by Noah Webster and "Peter Parley."

As a concomitant of the improvement in grading, equipment, and textbook-making that was going on, school discipline became much milder during the awakening. Instead of setting up inflexible and innumerable rules and accompanying them with flogging, "riding the ass,"

<sup>1</sup> See Fig. 67



wearing the "dunce's cap" (see p. 277), and other forms of punishment and disgrace, teachers endeavored to interest the pupils and use more kindly methods of correction. The classroom gradually came to be regarded more nearly as containing a group of friends or a family, as had been urged by Pestalozzi (see p. 298), but as yet little attempt was made to recognize individual differences in the treatment of pupils.

**Expansion of teacher training.** — The quality of teaching in the common schools was likewise greatly advanced during this period through the development of institutions for the special purpose of training teachers. In New York such a function was at first assumed by the academies as part of their work (see p. 284), but it was considered purely an incidental matter with them and not given serious attention until the Board of Regents began to urge state aid for the training of teachers. To this end a small subsidy was granted by the legislature in 1827, and seven years later a law was passed distributing \$3200 in aid of teacher education to eight academies, one in each senatorial district of the state. After that the courses for the education of teachers generally came to include a few pedagogical subjects, as well as a review of common branches and some advanced studies, but even then the training afforded could scarcely be considered professional.

A similar type of teacher preparation was being developed about the same time in the academies of New England and other states, but the situation was far from satisfactory. The creation of a special school for the purpose was clearly needed. Such an institution was frequently recommended in the articles of reformers and the messages of governors, and eventually "normal

schools" began to appear. The first schools of this sort under state auspices were voted by the Massachusetts legislature in 1838 (see p. 326), but similar institutions gradually developed in other commonwealths. The foundation of normal schools was bitterly contested by state legislatures and the academies, but within a decade after their opening in Massachusetts a school of this sort was established by New York at Albany (1844), by Connecticut at New Britain (1849), and by Michigan at Ypsilanti (1849). Before the Civil War a fourth institution had been added in Massachusetts, and Rhode Island, New Jersey, Iowa, Illinois, Minnesota, and Pennsylvania had each founded one school of the same kind.

More than a dozen state normal schools were thus established during the awakening. In 1857 a normal school under city auspices was also founded at St. Louis, and half a dozen institutions established privately — some of them destined to perform a notable service — soon came into existence. Thereafter teacher-training institutions, supported under state, city, or private auspices, rapidly increased in number and expanded in scope, but their real educational development came somewhat later. Even in this period, however, a number of standard works on methods of teaching were produced. Among these were Hall's *Lectures on Teaching* (1829), written for those studying in his normal schools (see p. 319), Jacob Abbott's *The Teacher* (1833), which passed through some twenty-five editions; and that most successful pedagogical treatise, *Theory and Practice of Teaching* (1847) by David P. Page,<sup>1</sup> which was written during his principalship of the normal school at Albany.

<sup>1</sup> See Phelps, William F. *David P. Page: His Life and Teachings* (E. L. Kellogg, New York)

## EXTENSION OF EDUCATION TO HIGHER LEVELS

**Development of the public high school.** — It was also during the awakening that state support and the system of common schools began to be extended upward to the secondary level. The new manufacturing and merchandising activities that had developed after the War of 1812 and the agitation for broader educational facilities that was being carried on, especially in New England, brought about a growing demand for more advanced public training than could be obtained through the elementary schools. While the academies continued to increase in number until several thousand of them had come into existence before the close of the awakening, the need for secondary institutions of a new type began to be felt. The academy more nearly approached the aims of democratic education than the old Latin grammar school, which was intended only for the training of an aristocratic group, but this institution, after all, constituted only a bridge between the educational facilities of our colonial period and the public school system of modern times. It was semi-private in control, stressed preparation for college more than for life, charged a tuition fee, and could hardly be considered in accord with the democratic attitude that was now growing up in education.

As these demands in secondary education became more evident, the trustees of the academies undertook to adapt themselves to the changed situation. The academic courses were made more practical and realistic and the institutions in many cases became "free academies," making no charge to local patrons, but the authorities still distrusted public management and persisted as close corporations. This accounts for the numerous instances

of so-called "academies" at the present day that have become part of public school systems, and for the name that has been perpetuated in such well-known institutions as the Norwich (Connecticut) Free Academy. But, with all these efforts to meet changing conditions, the academy



FIG 68 The first high school, established at Boston in 1821

was forced to yield its central place in the secondary field to a new type of institution, the high school, more closely adapted to the developing ideals of democracy.

"The first American high school," in the words of a recent authority (Grizzell), "was the outcome of the efforts of certain Boston citizens who conceived the idea of a public secondary school that would meet the needs of a new generation of merchants, artisans, and trades people." This Boston institution (Fig. 68) was opened in 1821 under the name of "English Classical School," but three years later the title was changed to "English High School." The new designation seems to have been suggested by a description of the Edinburgh High School

given by John Griscom (see p. 242) a few months before in a popular magazine.

The aim of the training in the school at Boston was distinctly that of fitting for practical life, and it offered English (with no other language), mathematics and various applications, sciences (see p. 511), history, declamation, and logic as its chief subjects. The course of study at first covered only three years, and the boys desiring to attend it were required to be at least twelve years of age and "well acquainted with reading, writing, English grammar in all its branches, and arithmetic as far as simple proportion." The curriculum was soon lengthened to four years, and English literature and geography were added to the prerequisites. The work was thus built upon the foundation of the English grammar schools (see p. 280) and did not parallel these institutions, as the Latin grammar schools and to a certain extent the academies had.

While this first institution of the kind was actually organized before the end of the preceding period, the real development of high schools occurred during the awakening. Two other high schools were founded in the closing years of the transition at Portland (1821) and Worcester (1824), respectively, and both of them appear to have largely copied the course of the Boston school. This also occurred at Salem, Plymouth, and New Bedford, where high schools were opened in 1827. In this year, too, we found (p. 323) that Carter succeeded in having English and Classical high schools required in all places of a stated size, and within a decade such institutions were established in a dozen large centers of Massachusetts. The other New England and the Middle states soon followed the example of founding high schools, and the pattern was likewise copied in the Southern and Western commonwealths.

But the development of high schools, which threatened to eclipse the academies, was desperately fought by the latter institutions everywhere, and, except in Massachusetts, high schools did not become general until after the Civil War. In most states their establishment was only permissive, and it entailed a prolonged struggle to secure the necessary taxation for their maintenance and a continual vigilance not to lose them when organized. But the academies for the most part had ultimately to be closed, and by the end of the awakening high schools were becoming common everywhere. In 1840 only about twenty-five of these institutions had been established in Massachusetts and the rest of New England, while less than a dozen could have been found in the Middle states and the South, but two decades later they had spread throughout the country, especially in Massachusetts and the democratic Middle West, and numbered nearly three hundred in all. Likewise high school opportunities were furnished for girls, both through coeducational and separate institutions.

**Growth in higher education.** — Higher education was also greatly extended during the awakening. Through the feeling produced by the Dartmouth College decision that a charter once granted a college could not be changed by the legislature, there arose a marked impulse toward the foundation of colleges, especially by various religious sects. As a result, before the outbreak of the Civil War colleges had increased in number from less than forty to considerably over two hundred. At first most of the colleges were quite denominational both in control and in teaching, but, as their wealth and clientèle expanded, they became virtually non-sectarian and widened their outlook so as to include preparation for public service as well as religious

development. In the course of this period were founded such reputable institutions as Wesleyan (1831), Bucknell (1846), and Rochester (1851) in the Eastern states, Mercer (1833), Trinity (1835, now Duke University), Emory (1836), and Baylor (1845) in the South; and Adelbert (1826, now Western Reserve University), Denison (1831), Wabash (1832), Marietta (1835), Knox (1837), DePauw (1838), Beloit (1846), Iowa (1846, now Grinnell), Northwestern (1851), and Earlham (1859) in commonwealths of the Middle West.

During this period women's colleges likewise began to be founded. Many institutions that approximated the college level were established for young women as the result of the efforts of such reformers as Emma Hart Willard, Catherine E. Beecher, and Mary Lyon, and some institutions, especially in the South, were actually given the name and rank of a college. Of these women's institutions Wesleyan College (Macon, Georgia, 1839), Mary Sharp College (Winchester, Tennessee, 1851), and Elmira College (Elmira, New York, 1855), are held to have been organized practically upon a level with colleges for men. Higher institutions upon a coeducational basis also began to appear. From the beginning Oberlin (1833), Otterbein (1846), Heidelberg (1850), and Antioch (1853) colleges were open to women students on practically the same basis as men, and some fifty others followed their example before the end of the revival.

The number of state universities, too, increased in this period. As state and national consciousness developed, the sentiment grew that existing colleges were aristocratic and narrow and failed to meet the demands of the state. It began to be felt that universities were needed to train leaders for the state and ought to be administered by it.

Hence there sprang up a demand for institutions of higher education that could really represent the commonwealth and crown its public school system. While the consummating period in the foundation of state universities came later, the movement appears to have been well advanced during the educational awakening. In addition to the nine universities of this kind already founded, ten others arose in the following states: Alabama (1831), Michigan



FIG. 69 The University of Michigan in 1855  
Reproduced from a painting by permission of the University

(1835), Vermont (1838), Missouri (1839), Iowa (1847), Wisconsin (1848), Mississippi (1848), Minnesota (1851), Florida (1856), and Louisiana (1860). These state institutions for many years closely resembled the denominational colleges, and were at first small, meagerly supported, inferior in equipment and standards, and hampered by political influence, but during the next period they became strong and independent (Fig. 69).

There was likewise during the awakening a considerable development of technical education. The Rensselaer Polytechnic Institute, started just before the beginning of this period (see p. 289), was supplemented during the late



forties and early fifties by the foundation of the Lawrence Scientific School at Harvard, the Sheffield Scientific School at Yale, the Chandler School at Dartmouth, the Polytechnic Institute of Brooklyn, and the courses in civil engineering at Union.

### SUMMARY OF THE CHAPTER

The earlier factors in the awakening of American education included efforts toward professional training of teachers, development of educational journalism, reports on European education, appeals of labor unions and popular conventions, messages of governors, and the pioneer activities of Carter. More direct forces appear in such educational achievements as those of Horace Mann as secretary of the Massachusetts Board of Education, of Henry Barnard in Connecticut and Rhode Island and as literary exponent of the revival, of Calvin H. Wiley in North Carolina, of Caleb Mills in Indiana, and of other leaders.

Coincident with this agitation were developed a movement toward universal education and secularized schools and the disappearance of pauper education and private school participation in public funds. It came to be recognized that land grants and state school funds were inadequate, and taxation, state and local, was needed, although "rate bills" to some extent continued through this period, and a controversy raged between the conservative and aristocratic and the liberal and public-spirited citizens.

The development of sentiment for support of public education is well illustrated in the legislation passed in Pennsylvania through the advocacy of Governor Wolf and Thaddeus Stevens, the additions to the common school fund and the enactment of millage taxation in New York, the appropriations for common schools in Massachusetts and New England generally, the stimulation of school taxes in North Carolina, and the opposition to "rates" in the Middle West. Concurrently state and local control took place through the creation of state, county, and city superintendents and boards of education.

Likewise large internal progress was evident in the improvement of school buildings, equipment, grading, and textbooks, the rise of normal schools and high schools, a large increase in the foundation of colleges, the opening of higher education to women, the development of state universities, and the beginning of technical education.

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## CHAPTER XVI

### DEVELOPMENT OF EDUCATIONAL PRACTICE

#### HERBART AND FROEBEL AS DISCIPLES OF PESTALOZZI

In the discussion of observation and industrial training, we have noted the suggestions for improvement in educational practice that arose through Pestalozzi. While based upon sympathetic insight rather than scientific principles, the positions of Pestalozzi not only left their direct influence upon the teaching of certain subjects in the elementary curriculum, but became the basis of the elaborate systems of Herbart and Froebel. These educators may be regarded as contemporary disciples of the Swiss reformer, who was born a generation before, but they continued his work along rather different lines. Each went to visit Pestalozzi, and it would seem from their comments upon what they saw that each found in the master the main principle which appealed to him and which he afterward developed more or less consistently throughout his work.

There are two very definite aspects of Pestalozzi's positions, which may at first seem opposed to each other, but are not necessarily contradictory. On the one hand, Pestalozzi seems to have held that education should be a natural development from within, on the other, that it must consist in the derivation of ideas from experience with the outside world. The former point of view, which is apparent in his educational aim and definition of education (see p. 302), would logically argue that every char-

acteristic is implicit in the child at birth in the exact form to which it is afterward to be developed, and that the teacher can at best only assist the child's nature in the efforts for its own unfolding. This attitude Pestalozzi apparently borrowed from the psychology implied in Rousseau's naturalism. The other conception, that of education as sense perception, which is evident in Pestalozzi's observational methods (pp. 302 f.), depends upon the theory that immediate and direct impressions from the outside are the absolute basis of all knowledge, and holds that the contents of the mind must be entirely built up by the teacher. Some such naive interpretation has been common ever since philosophic speculation began, especially among teachers, and had been formulated before Pestalozzi's day by Locke, Hume, and others.

In the main, Froebel took the first of these Pestalozzian viewpoints and rarely admitted the other, but the latter phase was developed by Herbart to the almost total disregard of the former. Hence we find that the one educator lays emphasis upon the child's development and activities, and the other concerns himself with method and the work of the teacher. The original contributions of both reformers to educational practice, however, were large, and are deserving of extended description )

#### JOHANN FRIEDRICH HERBART

**Early career and writings.** — <sup>84</sup>Johann Friedrich Herbart (1776-1841) both by birth and by education possessed a remarkable mind, and was well calculated to become a profound educational philosopher. He came of intellectual and educated stock, and at the gymnasium and university displayed a keen interest in philosophy, Greek, and mathematics. Each of these subjects was destined

to play a part in his educational theories. Just before graduation (1797), however, Herbart (Fig. 70) left the university to become private tutor to the three sons of the governor of Interlaken, Switzerland, and in this way during the next three years he obtained a most valuable



FIG. 70 Johann Friedrich Herbart

experience. The five extant reports that he made on the methods he used and on his pupils' progress reveal thus early the germs of his elaborate system.

The youthful pedagogue seems to have recognized the individual variations in children, and to have shown a due regard for the respective ages of his pupils. He also sought, by means of his favorite book, the *Odyssey*, to develop in them the elements of morality and

a "many-sided interest." This early experience, rather than his ingenious system of psychology and metaphysics, which he afterward developed in explanation, was the real foundation of his pedagogy, and furnished him with the concrete examples of the characteristics and individualities of children that appear in all his later works. He ever afterward maintained that a careful study of the development of a few children was the best preparation for a pedagogical career, and eventually made an experience of this kind the main element in his training of teachers.

While still in Switzerland, Herbart met Pestalozzi and was greatly attracted by the underlying principles of that reformer. He paid a visit to the institute at Burgdorf in



1799, and during the next two years, while at Bremen completing his interrupted university course, he undertook to advocate and render more scientific the thought of the Swiss educator. Here he wrote a sympathetic essay *On Pestalozzi's Latest Writing, "How Gertrude Teaches Her Children,"* and made his interpretation of *Pestalozzi's Idea of an A B C of Observation* (see p. 302). Next Herbart lectured on pedagogy at the University of Göttingen. The treatises he wrote there show that he had become more critical toward the Pestalozzian methods. Sense perception, he holds with Pestalozzi, does supply the first elements of knowledge, but the material of the school course should be definitely arranged with reference to the general purpose of instruction, which is moral self-realization. This position on the moral aim of education he made especially explicit and complete in his work on *The Science of Education* (1806).

**Work at Königsberg and Göttingen.** — In 1809 Herbart was called to the chair of philosophy at Königsberg, and there established his historic pedagogical seminary and the small practice school connected with it. The students, who taught in this school under the supervision of the professor, eventually became school principals and inspectors, and spread the Herbartian doctrines throughout the states of Germany. In his numerous publications at Königsberg, Herbart devoted himself chiefly to works on a system of psychology as a basis for his pedagogy. After serving nearly a quarter of a century here, he returned to Göttingen as professor of philosophy, and the last eight years of his life were spent in expanding his pedagogical positions. Here he issued the first edition of his *Outlines of Educational Doctrine* (1835), which gives an exposition of his psychology and educational system when fully matured.

**System of psychology and education.**—(Herbart's metaphysical psychology seems to have been an after-thought developed to afford a basis for the method of pedagogical procedure. But some explanation of this elaborate psychology may serve to make clearer his educational principles. For the most part he holds that the mind is built up by the outside world, and he is generally supposed to have left no place for instincts or innate characteristics and tendencies. With him the simplest elements of consciousness are "ideas," which are atoms of mind-stuff thrown off from the soul in endeavoring to maintain itself against external stimuli. Once produced, the ideas become existences with their own dynamic force, and constantly strive to preserve themselves. They struggle to attain as nearly as possible to the summit of consciousness, and each idea tends to draw into consciousness or heighten those allied to it, and to depress or force out those which are unlike. Each new idea or group of ideas is heightened, modified, or rejected, according to its degree of harmony or conflict with the previously existing ideas.

In other words, all new ideas are interpreted through those already in consciousness. In accordance with this principle, which Herbart called "apperception," the teacher can secure the interest and the attention of the pupil to any new idea or set of ideas and have him retain it, only through making use of his previous body of related knowledge. Hence the educational problem becomes how to present new material in such a way that it can be "apperceived" or incorporated with the old, and the mind of the pupil is largely in the hands of the teacher, since he can make or modify his "apperception masses," or systems of ideas.

(**Moral aim of education.** — Accordingly, Herbart holds that the purpose of education should be to establish moral and religious character. He believes that this final aim can be attained through instruction, and that to determine how this shall furnish a "moral revelation of the world," a careful study must be made of each pupil's thought masses, temperament, and mental capacity. There is not much likelihood of the pupil's receiving ideas of virtue that will develop into glowing ideals of conduct when his studies do not appeal to his thought systems and are consequently regarded with indifference and aversion. They must coalesce with the ideas he already has, and thus touch his life.

But Herbart does not limit "interest" to a temporary stimulus for the performance of certain school tasks; he advocates the building up by education of certain broad interests that may become permanent sources of appeal in life. Instruction must be so selected and arranged as not only to relate itself to the previous experience of the pupil, but as also to reveal and establish all the relations of life and conduct in their fullness. In analyzing this "many-sided interest," Herbart holds that ideas and interests spring from two main sources, — "experience," which furnishes us with a knowledge of nature, and "social intercourse," from which come the sentiments toward our fellow men.

Interests may, accordingly, be classed as belonging to (1) "knowledge" or to (2) "participation." These two sets of interests, in turn, Herbart divides into three groups each. He classes the "knowledge" interests as (a) "empirical," appealing directly to the senses; (b) "speculative," seeking to perceive the relations of cause and effect; and (c) "esthetic," resting upon the enjoyment.

of contemplation. The "participation" interests are divided into (a) "sympathetic," dealing with relations to other individuals; (b) "social," including the community as a whole; and (c) "religious," treating one's relations to the Divine.)

**Historical and scientific studies; "correlation" and "culture epochs."** — Instruction must, therefore, develop all these interests, and, to correspond with the two main groups, Herbart divides all studies into two branches: (1) "historical," including history, literature, and languages; and (2) "scientific," embracing mathematics, as well as the natural sciences. Although recognizing the value of both groups, Herbart especially stresses the "historical," on the ground that history and literature are of greater importance as the sources of moral ideas and sentiments. But, while all the subjects, "historical" and "scientific," are needed for a "many-sided interest," and the various studies have for convenience been separated and classified by themselves, he holds that they must be so arranged in the curriculum as to become unified into an organic whole if the unity of the pupil's consciousness is to be maintained.

This position forecasts the emphasis upon "correlation," or the unification of studies, so common among Herbart's followers. The principle was further developed by later Herbartians under the name of "concentration," or the unifying of all subjects around one or two common central studies, such as literature or history. But the selection and articulation of the subject-matter in such a way as to arouse many-sidedness and harmony is not more than hinted at by Herbart himself. He specifically holds, however, that the *Odyssey* should be the first work read, since this represents the interests and activities of the

race while in its youth, and would appeal to the individual during the same stage. He would follow this with other Greek classics in the order of the growing complexity of racial interests depicted in them. This tentative endeavor of Herbart, in the selection of material for the course of study, to parallel the development of the individual with that of the race, was continued and enlarged by his disciples, and became known as the "culture epochs" theory.)

**Five formal steps of instruction.**—(But to secure this broad range of material and to unify and systematize it, Herbart realized that it was necessary to formulate a definite method of instructing the child. This plan of instruction he wished to conform to the development and working of the human mind, and on the basis of what he conceived this activity to be, he mapped out a method with four logical steps. (1) "clearness," the presentation of facts or elements to be learned; (2) "association," the uniting of these with related facts previously acquired; (3) "system," the coherent and logical arrangement of what has been associated, and (4) "method," the practical application of the system by the pupil to new data.

The formulation of this method was made only in principle by Herbart, but it has since been largely modified and developed by his followers. It was soon felt that, on the principle of "apperception," the pupil must first be made conscious of the existing stock of ideas so far as they are similar to the material to be presented, and that this can be accomplished by a review of preceding lessons or by an outline of what is to be undertaken, or by both procedures. Hence Herbart's noted disciple, Ziller, divided the step of "clearness" into "preparation" and "presentation." The names of the other three processes

have been changed for the sake of greater lucidity and significance by later Herbartians, and the "five formal steps of instruction" are now given as (1) "preparation," (2) "presentation," (3) "comparison and abstraction," (4) "generalization," and (5) "application."

**Herbart's development of Pestalozzian principles.** — (On all sides, then, as compared with Pestalozzi, Herbart was most logical and comprehensive. Where Pestalozzi obtained his methods solely from a sympathetic insight into the child mind, Herbart sought to found his also upon scientific principles. The former was primarily a philanthropist and reformer; the latter, a psychologist and educationalist. Pestalozzi succeeded in arousing Europe to the need of universal education and of vitalizing the prevailing formalism in the schools, but he was unable, with his vague and unsystematic utterances, to give guidance and efficiency to the reform forces he had initiated. While he felt the need of beginning with sense perception for the sake of clear ideas, he had neither the time nor the training to construct a psychology beyond the traditional one of the times, nor to analyze the way in which the material gained by observation is assimilated. Herbart, on the other hand, did create a system of psychology that, while fanciful and mechanical, worked well as a basis for educational theory and practice.

In keeping with this psychology, Herbart undertook to show how the ideas, which were the product of the Pestalozzian "observation," were assimilated through "apperception," and maintained the possibility of making all material tend toward moral development. This, he held, could be accomplished by use of proper courses and methods. In determining the subjects to be selected and articulated, he considered Pestalozzi's emphasis upon the

study of the physical world to be merely a stepping-stone to his own "moral revelation of the world." While the former educator made arithmetic, geography, natural science, reading, form study, drawing, writing, and music the object of his consideration, and is indirectly responsible for the modern reforms in teaching these subjects, Herbart preferred to stress history, languages, and literature, and brought about improved methods in their presentation. He also first undertook a careful analysis of the successive steps in all instruction, and by his methodical principles did much to introduce order and system into the work of the classroom, although it is now known that his conception of the way in which the human mind works is hardly tenable. \

**Formalization and exaggeration by Herbart's disciples.—**

A great drawback to the Herbartian doctrines is found in their formalization and exaggeration. For these tendencies his enthusiastic and literal-minded followers, rather than Herbart himself, have probably been to blame. He was himself too keen an observer to allow his doctrines to go upon all fours. He is ordinarily credited by Herbartians with a psychology that takes no account of the innate characteristics of each mind, and holds that the mind is entirely built up by impressions from the outside, but, while this is his main position, he occasionally recognizes that there must be certain native "predispositions" in the body which influence the soul in one direction or another. This limitation of complete plasticity by the pupil's individuality, and of the consequent influence of the teacher, causes him to perceive that "in order to gain an adequate knowledge of each pupil's capacity for education, observation is necessary — observation both of his thought masses and of his physical nature."

Again, while Herbart holds that every subject should, if possible, be presented in an attractive, interesting, and "almost playlike" way, he does not justify that "sugar-coated interest" which has so often put Herbartianism in bad odor. "A view that regards the end as a necessary evil to be rendered endurable by means of sweetmeats," says he, "implies an utter confusion of ideas; and if pupils are not given serious tasks to perform, they will not find out what they are able to do." Often, he realizes, "even the best method cannot secure an adequate degree of apperceiving attention from every pupil, and recourse must accordingly be had to voluntary attention, i.e., to the pupils' resolution." Likewise, while advocating "correlation" between different subjects, as well as between principles within the same subject, Herbart felt that such ramifications could sometimes be overdone. Further, although he made some effort in shaping the course of study to parallel the development of the individual with that of the race, it was Ziller that erected this procedure into a hard and fast theory of "culture epochs."

But most common of all perversions has been the tendency of Herbart's disciples to pervert his attempt to bring about due sequence and arrangement into an inflexible *schema* in the recitation, and to make the formal steps an end rather than a means. As a matter of fact, there is reason to believe that Herbart never intended that all these steps should be carried out in every recitation, but felt that they applied to the organization of any subject as a whole, and that even years might elapse between the various steps.

**Development of the Herbartian doctrines in Germany.**—At first the doctrines of Herbart were little known, but



a quarter of a century after his death there sprang up two flourishing contemporary schools of Herbartianism. In its application of Herbart's theory, the school of Stoy for the most part held closely to the original form, but that headed by Ziller departed further and gave it a more extreme interpretation. A later Herbartian, however, Wilhelm Rein of Jena, who had been a pupil of both Stoy and Ziller, was responsible for the most elaborate developments that have taken place since Herbart's time. He adopted Ziller's "concentration," "culture epochs," and other features, but made them a little more elastic by co-ordinating other material with the "historical" center in the curriculum. Through him Jena became known as the great seat of Herbartianism. A throng of other German schoolmasters and professors have further adapted the doctrines of Herbart to school practice. While their theories differ very largely from one another, from their common basis they are all properly designated as "Herbartian."

As a result of continuous propaganda, the content and methods of the school curricula in Germany were largely modified. Herbart's emphasis upon the importance to the secondary schools of literary and historical studies as a moral training was adapted to the elementary schools by the later Herbartians in the form of story and biographical material, and the plan for concentrating all studies about a core of history and literature came into evidence everywhere. A twofold course, Jewish history through Bible stories, and German history in the form of legends and tales, appeared in every grade of the elementary school after the first two, and even in these lower classes there was some attempt to utilize literature as a moral training through the medium of fairy stories, fables, moral tales,

*Robinson Crusoe*, and the various stories of the philanthropinists (see p. 226).

**Influence of Herbartianism in the United States.**—Next to the land of its birth, the United States has been more influenced by Herbartianism than any other country. In America the movement was fostered largely by American teachers that had studied with Rein at Jena during the last two decades of the nineteenth century. Before 1890 nine Americans had taken their degree there, and by the twentieth century more than fifty. These young men came back filled with enthusiasm for the Herbartian principles, and began at once to propagate their faith. The movement centered chiefly in northern Illinois and was especially strong in the normal schools. The staff of the Illinois State Normal University at this time included Charles DeGarmo, Frank M. McMurry, and his brother, Charles A. McMurry, all of whom were later called to prominent positions. The practice school at the Normal University was the first to be established upon Herbartian principles and the Schoolmasters' Club of Illinois gave much of its time to a discussion of Herbartian principles, and the production of Herbartian literature.

Hence during the last decade of the century there appeared large numbers of articles, textbooks, treatises, and translations, including *The Method of the Recitation* and a variety of other works upon general and special methods by the McMurrys. In 1892 the now historic Herbart Club was founded to promote a study of the new methods and adapt them to American conditions, and during the first three years it spent its efforts in translating and discussing the thoughts of its namesake. But three years later the club's title was changed to Herbart Society for the Scientific Study of Education, and the publication

of a *Year Book* was begun. While the movement was somewhat opposed on the score of being a foreign importation or being based on absurd metaphysical presuppositions, it was successfully defended by the Herbartians and soon assumed the proportions of a cult.

Moreover, many who could hardly be called Herbartians undertook to modify and adapt the new principles to their work. Francis W. Parker of Chicago, for example, in various phases of his educational practice (cf. pp. 307 and 403), approached concentration so closely as to center the entire course of study around a hierarchy of natural and social sciences. And the Committees of Ten and Fifteen, appointed by the National Education Association to report upon secondary and elementary education respectively, indicated a strong Herbartian influence in their repeated recommendations of correlation.

Largely in consequence of this development, a broader utilization of history became general in American elementary curricula, and an appreciation of the growth of morality, culture, and social life, rather than merely the development of patriotism, came to be the object in studying this subject. English and German history, as well as American, which alone was formerly taught, and sometimes Greek, Roman, and Norse, appeared in the curricula of many schools, and, instead of being confined to the two upper classes, the material was often presented from the third grade up. Biographical and historical stories were largely employed in the lower classes, while in the upper some attempt was made to use European history as a setting for American.

A similar development in the amount and use of literature also appeared in the course of the elementary schools, partly as a result of the Herbartian influence. Instead of

brief selections from the English and American writers, or the wretched material that formerly appeared in school readers, complete works of literature began to be studied in the elementary curriculum, and a wide and rapid survey of the great English classics was encouraged in the place of merely reading for the sake of oral expression. Even in the lowest grades some attempt to introduce the classics of childhood has been made.

While in these ways the curricula of all elementary, and to some extent secondary, schools were largely affected, Herbartianism pure and simple has now been abandoned for less dogmatic methods. Even the Herbart Society eventually ceased to foster a propaganda, and in 1901 dropped the first part of its name and came to be known as "The National Society for the Scientific Study of Education." The later works of DeGarmo and the McMurrys claimed to be quite emancipated from Herbartianism. But, although professed Herbartians are now almost unknown in the United States, no other system of pedagogy, except that of Pestalozzi, has ever had so wide an influence upon American education and upon the thought and practice of teachers generally.

#### FRIEDRICH WILHELM AUGUST FROEBEL

**Early life and education.** — Let us now turn to Froebel, the other great successor of Pestalozzi, and to his development and extension of the master's principle of "natural development." Friedrich Wilhelm August Froebel (1782-1852) was born in a village of the Thuringian forest. He tells us that this environment started within him a search for the mystic unity that he believed to exist amid the various phenomena of nature, but it is more likely that this attitude was developed through a brief residence

(1799–1800) at the University of Jena. The atmosphere about this institution was charged with the idealistic philosophy, the romantic movement, and the evolutionary attitude in science. Froebel (Fig. 71) could not have escaped the constant discussions upon the philosophy of Fichte and Schelling. He must likewise have fallen under the spell of the Jena romanticists—the Schlegels, Tieck, and Novalis. The advanced attitude in science at Jena may also have impressed the youth. While much of the science instruction failed to make clear that inner relation and mystic unity for which he sought, he must occasionally have caught glimpses of it in the lectures of professors belonging to the school of *Naturphilosophie*.

After leaving this university, Froebel was for four years groping for a niche in life. But he eventually (1805) met Anton Gruner, head of a Pestalozzian model school at Frankfort, who persuaded him of his fitness for teaching and gave him a position in the institution. Here he undertook a systematic study of Pestalozzianism, and, through the use of modeling in paper, pasteboard, and wood with his pupils, came to see the value of motor expression as a means of education. He then withdrew to Yverdon and worked with Pestalozzi himself for two years (1808–1810). There he greatly increased his knowl-



FIG 71 Friedrich Wilhelm August Froebel

edge of the play and development of children, music, and nature study, which were destined to become so important in his methods. Next, he went to the University of Berlin to study mineralogy with Professor Weiss, and through the work there he finally crystallized his mystic law of "unity."

While at Berlin, too, Froebel met his lifelong assistants, Langethal and Middendorf, and took them with him when he undertook the education of his five young nephews at Keilhau. Here he founded (1816) "The Universal German Institute of Education," in which self-expression, free development, and social participation were ruling principles. Much of the training was obtained through play, and although the pupils were older, the germ of the kindergarten was already present. To popularize the work of the institute, Froebel published a systematic account of the theory practiced at Keilhau in his famous *Education of Man* (1826). While this work is compressed, repetitious, and vague, and its doctrines had afterward to be corrected by experience, it contains the most systematic statement of his educational philosophy that Froebel ever made.

**Development of the kindergarten.** — But the school at Keilhau was too radical for the times, and soon found itself in serious straits. Froebel then went to Switzerland, and for five years (1832-1837) continued his educational experiments in various locations there. While conducting a model school at Burgdorf, it became obvious to him that "all school education was yet without a proper initial foundation, and that, until the education of the nursery was reformed, nothing solid and worthy could be attained," and through a study of Comenius' *School of Infancy* (see p. 177) the educational importance of play came to

appeal to him more strongly than ever. He began to study and devise playthings, games, and bodily movements, that would be of value in the development of small children, although at first he did not organize his materials into a system.

Then, two years later, he returned to Germany, and established a school for children between the ages of three and seven. This institution was located at Blankenburg, two miles from Keilhau, one of the most romantic spots in the Thuringian Forest, and was, before long, appropriately christened "Kindergarten" (i.e., garden in which children are the unfolding plants). Here he put into use the material he had invented in Switzerland, added new devices, and developed his system. The main features of this were the "play songs" for mother and child and the series of "gifts" and "occupations" (pp. 397 f.). During his seven years in Blankenburg, he constantly expanded his material, and the accounts of these additions have been collected in the works known generally as *Pedagogics of the Kindergarten*, *Education by Development*, and *Mother Play and Nursery Songs*.

**Fundamental concept of "unity."** — While Froebel's underlying principles go back to the developmental aspect of Pestalozzi's doctrines and even to Rousseau's naturalism, his conception of them, his imagery, and statement appear to be a product of the idealistic philosophy, romantic movement, and scientific attitude of the day. "These tendencies seem to have been assimilated by Froebel largely through his residence in Jena and Berlin. His conclusions as to educational theory and practice would have been possible as inferences from a very different point of view, but as he developed them logically and consistently with his metaphysical position, it may be of

value to consider briefly the groundwork of the Froebelian philosophy. He regarded the "Absolute," or God, as the self-conscious spirit from which originated both man and nature, and he consequently held to the unity of nature with the soul of man. His fundamental view of this organic unity appears in his general conception of the universe. Thus he declares:

In all things there lives and reigns an eternal law. This all-controlling law is necessarily based on an all-pervading, energetic, living, self-conscious, and hence eternal Unity. This Unity is God. All things have come from the Divine Unity, from God, and have their origin in the Divine Unity, in God alone. All things live and have their being in and through the Divine Unity, in and through God. The divine effluence that lives in each thing is the essence of each thing.

**Motor expression as educational method.** — This fundamental mystic principle Froebel constantly reiterates in various forms, and from it derives a number of subsidiary conceptions. But he also holds that, "while in every human being there lives humanity as a whole, in each one it is realized and expressed in a wholly particular, peculiar, personal, and unique manner." Hence he maintains that there is in every person at birth a co-ordinated, unified plan of his mature character, and that, if it is not marred or interfered with, it will develop naturally of itself. While he is not entirely consistent, and at times implies that this natural development must be guided and even shaped, in the main he reiterates Rousseau's doctrine that "nature is right," and clearly stands for a full and free expression of the instincts and impulses. Hence he insists that "education in instruction and training should necessarily be *passive, following; not prescriptive, categorical, interfering.*"



In his conclusion as to the proper method for accomplishing this "development," Froebel naturally holds that it "should be brought about not in the way of dead imitation or mere copying, but in the way of living, spontaneous self-activity." By this principle of "self-activity" as the method of education Froebel seeks not simply activity in response to suggestion or instruction from parents or teachers, but activity of the child in carrying out his own impulses and decisions. Accordingly, with this idea of development through "self-activity" is connected his principle of "creativeness," by which new forms and combinations are made and expression is given to new images and ideas. "Plastic material representation in life and through doing, united with thought and speech," he declares, "is by far more developing and cultivating than the merely verbal representation of ideas."

**Emphasis upon social participation.** — This psychological principle of motor expression under the head of "self-activity" and "creativeness" is the chief characteristic of Froebel's method. Rousseau had also recommended motor activity as a means of learning, but he had insisted upon an isolated and unsocial education for Emile, whereas Froebel stresses the social aspects of education quite as clearly as he does the principle of self-expression. In fact, he holds that increasing self-realization, or individualization through "self-activity," must come through a process of socialization. The social instinct is primal, and the individual can be truly educated only in the company of other human beings. The life of the individual is necessarily bound up with participation in institutional life.

In fact, each one of the various institutions of society in which the mentality of the race has manifested itself

— the home, the school, the church, the vocation, the state — becomes a medium for the activity of the individual, and at the same time a means of social control. As far as the child enters into the surrounding life, he is to receive the development needed for the present, and thereby also to be prepared for the future. Through imitation of co-operative activities in play, he obtains not only physical, but intellectual and moral training. Such a moral and intellectual atmosphere Froebel sought to cultivate at Keilhau by co-operation in domestic labor, "lifting, pulling, carrying, digging, splitting," and through co-operative construction out of building blocks of a chapel, castle, and other features of a village. Similarly, the kindergarten was intended to "represent a *miniature state* for children, in which the young citizen can learn to move freely, but with consideration for his little fellows."

**The kindergarten as a contribution.** — Beside his basal principles of motor expression and social participation, Froebel made a third contribution to educational practice in advocating as a means of realizing these principles a school without books or set intellectual tasks, and permeated with play, freedom, and joy. In the kindergarten, "self-activity" and "creativity," together with social co-operation, found complete application and concrete expression. The training there has always consisted of three co-ordinate forms of expression. (1) song, (2) movement and gesture, and (3) construction; and mingled with these and growing out of each is the use of language by the child. But these means, while separate, often co-operate with and interpret one another, and the process is connected as an organic whole. For example, when the story is told or read, it is expressed in song, dramatized

in movement and gesture, and illustrated by a construction from blocks, paper, clay, or other material.

The *Mother Play and Nursery Songs* were intended to exercise the infant's senses, limbs, and muscles, and, through the loving union between mother and child, draw both into intelligent and agreeable relations with the common objects of life about them. The fifty "play songs" are each connected with some simple nursery game, like "pat-a-cake," "hide-and-seek," or the imitation of some trade (Fig. 72), and are intended to correspond to a special physical, mental, or moral need of the child. The selection and order of the songs were determined with reference to the child's development, which ranges from almost reflex and instinctive movements up to an ability to represent his perceptions with drawings, accompanied by considerable growth of the moral sense. Each song contains three parts (1) a motto for the guidance of the mother, (2) a verse with the accompanying music, to sing to the child; and (3) a picture illustrating the verse.

The "gifts" and "occupations" were both intended to stimulate motor expression, but the "gifts" combine and rearrange certain definite material without changing the form, while the "occupations" reshape, modify, and transform their material. Of the gifts, the first consists of a box of six woolen balls of different colors. They are to be rolled about in play, and thus develop ideas of color, material, form, motion, direction, and muscular sensibility. A sphere, cube, and cylinder of hard wood compose the second "gift." A comparison is thus made of the stability of the cube with the movability of the sphere, and the two are harmonized in the cylinder. The third gift is a large wooden cube divided into eight equal cubes, thus teaching the relations of the parts to the whole and to one another,

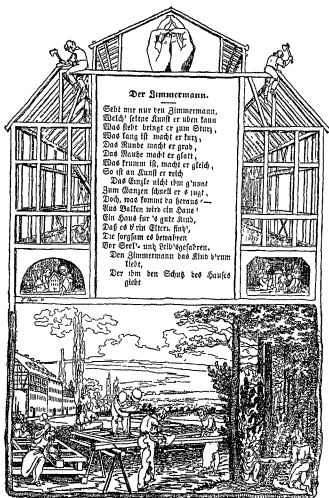


FIG 72 Der Zimmermann (The Carpenter)

Reproduced by permission of D Appleton and Company from the Ehot and Blow edition of Froebel's *Mother Play*

and making possible original constructions. The three following gifts divide the cube in various ways so as to produce solid bodies of different types and sizes, and excite an interest in number, relation, and form. From them the children are encouraged to construct geometrical figures and artistic designs

The occupations comprise a long list of constructions with paper, sand, clay, wood, and other materials. Corresponding with the gifts that deal with solids, may be grouped occupations in clay-modeling, cardboard-cutting, paper-folding, and wood-carving, and with those of surfaces may be associated mat- and paper-weaving, stick-shaping, sewing, bead-threading, paper-pricking, and drawing. The emphasis in kindergarten practice has long since come to be transferred from the gifts to the occupations, which have been largely increased in range and number

**Value of Froebel's principles.** — For one pursuing destructive criticism only, it would not be difficult to find flaws in both the theory and practice of Froebel. In the *Mother Play* the pictures are rough and poorly drawn, the music is crude, and the verses are lacking in rhythm, poetic spirit, and style (Fig 72). But the illustrations and songs served well the interests and needs of those for whom they were produced, and Froebel himself was not insistent that they should be used after more satisfactory compositions were found. Other criticism of his material has been made on the ground that it was especially adapted to German ideals, German children, and the relatively simple village life of Froebel's experience, and that it needs considerable modification to suit other countries and the industrial organization of society today. His more liberal disciples, however, realize that it is the spirit of his under-

lying principles, and not the letter of his practice, that should be followed, and have constantly struggled to keep the kindergarten matter and methods in harmony with the times and the environment.

A more serious hindrance to the acceptance of Froebelianism has arisen from his peculiar mysticism and symbolism. Since all things live and have their being in and through God and the divine principle in each is the essence of its life, everything is liable to be considered by Froebel as symbolic in its very nature, and he often resorts to fantastic and strained interpretations. Thus with Froebel the cube becomes the symbol of diversity in unity, the faces and edges of crystals all have mystic meanings, and the numbers three and five reveal an inner significance. At times this symbolism descends into a literal and verbal pun, where it seems to a modern that he can hardly be in earnest.

Further, Froebel holds that general conceptions are implicit in the child, and each of these can be awakened by "adumbration," that is, by presenting something that will symbolically represent that particular "innate idea." Thus, in treating the gifts and games, he maintains that from a ball the pupils gather an abstract notion of "unity." Moreover, because God is the self-conscious spirit that originated both man and nature, and everything is interconnected, he believes that each part of the universe may throw light on every other part, and constantly holds that a knowledge of external nature, such as the formation of crystals, will enable one to comprehend the laws of the mind and of society.

Unfortunately, this mystic symbolism has been regarded by strict constructionists among the kindergartners as the most essential feature in Froebelianism, and they

expect the innocents in their charge to reveal the symbolic effect of the material upon their minds. There is no real evidence for supposing that such associations between common objects and abstract conceptions exist for children. But such an imaginary meaning may be forced upon an object by the teacher, and pupils in conservative kindergartens learned to adopt certain phrases and attitudes as would imply such mystic meaning. Had Froebel possessed the enlarged knowledge of biology, physiology, and psychology that is available for one living in the twentieth century, it is unlikely that he would have insisted upon the symbolic foundations for his pedagogy. His excellent practice has been heavily handicapped by these interpretations.

But Froebel has had a most happy effect upon education as a whole. In some respects he utilized features from other reformers. We can see that he adopted many of Pestalozzi's objective methods in geography, natural history, arithmetic, language, drawing, writing and reading, and constructive geometry; reiterated Rousseau's views upon the infallibility of nature, and advocated the physical training and excursions as a means of study that are stressed by both these reformers. In his use of stories, legends, fables, and fairy-tales, he paralleled his contemporary, Herbart, in his influence upon the curriculum. But in his emphasis upon motor expression and social participation, together with his advocacy of a school without books or set tasks, Froebel was unique, and made a most distinctive contribution to educational practice.

**Influence on manual training and other movements.** — Froebel himself never fully worked out his theories in connection with schooling beyond the kindergarten, but in all stages of education we have now come to realize the value

of discovering and developing individuality by means of initiative, execution, and co-operation, and spontaneous activities, like play, construction, and occupational work, have become more and more the means to this end. For example, the "busy work," "whittling," "clay-modeling," "sloyd," and other types of "manual training" have to a large degree sprung from the influence of Froebel. Cygnæus, who in 1858 started the manual training movement in Finland, owed his inspiration to Froebel and his own desire to extend the kindergarten occupations through the grades. And through the visit of Salomon to Cygnæus in 1874, Sweden transformed its sloyd from a system of teaching the elements of trades to the broader educative method of manual training. This use of constructive work for educational purposes rather than for industrial efficiency soon spread to Russia and the rest of Europe.

The first suggestion of manual training courses in the United States probably came through the exhibit in wood and iron work by the Russian government at the Centennial Exposition of 1876 in Philadelphia. Embodiment of such work in an actual institution appeared before long in the St. Louis Manual Training (High) School, founded in 1880 through the influence of Calvin M. Woodward, professor in Washington University. This became a model for private manual training schools in half a dozen other cities, and then for similar institutions under public control in Baltimore (1884), Philadelphia (1885), Omaha (1886), and many other cities. In all these schools the Russian system prevailed, and courses in wood-turning, joinery, pattern-making, forging, foundry work, and machine shop were furnished, but metal, leather, clay, and cement work, and drawing and design were generally



added later. Manual training soon came to be offered also in the elementary work of various schools through an extension of the kindergarten activities upward.

Various other types of modern educational theory and practice, especially those associated with experiments made in the United States, also reveal large elements of Froebelian influence. Among these might be included the work of Colonel Parker (see p. 389) and of Professor John Dewey. The Froebelian emphasis upon motor expression, the social aspect of education, and informal schooling are evident throughout Parker's work in his elementary school, and are even extended so as to include speech and the language-arts. Similarly, Dewey's occupational work and industrial activities, which were used through the entire course of his "experimental school" in Chicago, although not copied directly from Froebel, closely approached the modified practice of the kindergarten (see p. 538).

**Spread of the kindergarten.** — Directly after the death of Froebel, the kindergarten began to be spread through his devoted followers, especially Baroness von Bülow. She visited France, Belgium, Holland, Italy, and Russia, and in 1867 her address before the "Congress of Philosophers" at Frankfort led to the formation of a Froebel Union to promote the system. The propaganda was everywhere eagerly embraced. Kindergartens, training schools, and journals devoted to the movement sprang up rapidly. While kindergarten practice was sometimes combined with the infant school movement (pp. 246 f.), and lost some of its most vital characteristics, even in these cases cross-fertilization afforded abundant fruitage. Only in Germany, the native land of the kindergarten, has serious hostility remained. Kindergartens have, with few

exceptions, never been recognized there as genuine schools or part of the regular state system, but are considered little more than a species of day nursery.

The development and influence of the kindergarten have been more marked in the United States than in any other country. Attempts at a private kindergarten in America were made shortly after the middle of the nineteenth century by educated Germans, notably Mrs. Carl Schurz, who had emigrated to America because of the unsettled conditions at home. A more fruitful undertaking occurred at Boston through Elizabeth P. Peabody, who in 1867 went to study with Froebel's widow. After her return the following year Miss Peabody spent the remainder of her life in interesting parents, philanthropists, and school boards in the movement. In 1868 through Miss Peabody the first training school for kindergartners in the United States was established at Boston. In 1872 a similar institution was opened in New York by Maria Bolte, who also had studied with Frau Froebel. The same year saw the beginning of Susan E. Blow's work in St. Louis, where her free training school for kindergartners was opened. Another missionary effort began in 1876 through Emma Marwedel, who was employed to organize voluntary kindergartens and training classes throughout the chief centers of California.

The kindergarten movement grew rapidly. Between 1870 and 1890 in all the leading cities of the country subscriptions for kindergartens were raised by various philanthropic agencies, and by the close of the century there were about five hundred such voluntary associations. But private foundations are restrictive, and it was not until the kindergarten began to be adopted by public school systems that the movement became truly national

in scope. Boston in the early seventies added a few kindergartens to her public schools, but after several years of trial gave them up on account of the expense. The first permanent establishment under a city board was made in 1873 at St. Louis. Twelve kindergartens were organized at first, but others were opened as rapidly as competent directors could be prepared at Miss Blow's training school until there were more than fifty. San Francisco authorized the addition of kindergartens to the public schools in 1880, and between that date and the end of the century some two hundred cities made the work an integral part of their system.

#### RELATIVE INFLUENCE OF THE GREAT REFORMERS

It is now obvious how large a part in the development of modern educational practice has been played by Herbart and Froebel. There are few tendencies in the curricula and methods of the schools today that cannot in their beginnings be traced back to them, or to Pestalozzi, their master. But the reforms of all three find their roots in Rousseau (Fig. 36). His "naturalism" was continued by Pestalozzi (Fig. 50) in his "development" and "observation," which were, in turn, further elaborated by Froebel and Herbart respectively (Figs. 70 and 71).

Through his "observation" methods, Pestalozzi greatly improved the teaching of arithmetic, language work, geography, elementary science, drawing, writing, reading, and music, and, by means of Fellenberg's continuation of his work, developed industrial and philanthropic training. As a result of Herbart's moral and religious aim, marked advances in the teaching of history and literature took place, and, largely through his carefully wrought educational method, order and system have everywhere been

introduced into instruction. From Froebel's mystic interpretation of "natural development" we have obtained the kindergarten training for a period of life hitherto largely neglected, the informal occupations, manual training, and other forms of motor expression, together with psychological and social principles that underlie every stage of education.

Pestalozzi's reforms were felt in Europe throughout the first half of the nineteenth century, but did not have any wide effect upon the United States until after the "Oswego movement" in the sixties. The influence of Froebel appeared in Europe shortly after the middle of the century, and began to rise to its height in America about 1880. The Herbartian theory and practice became popular in Germany between 1865 and 1885, while the growth of Herbartianism in the United States began about five years after the latter date. Hence the development of modern educational practice, due to these three great reformers, falls distinctly within the latter half of the nineteenth century.

### SUMMARY OF THE CHAPTER

Of the two aspects to Pestalozzi's educational positions, Froebel stressed development from within, and Herbart impression from without.

Through an early tutorial experience Herbart developed his pedagogy, but afterward invented an ingenious psychology upon which to base it. He undertook to show how the mind of the pupil is largely built up by the teacher, and he held to the moral aim of education. To accomplish this, he advocated "many-sided interest," and, while recognizing the value of both "historical" and "scientific" subjects, emphasized the former. But he also held that all subjects should be unified through "correlation," and formulated the "formal steps of instruction." The value of his work has been obscured by the formal interpretations of disciples, but he contributed greatly to the

science of education. Herbartianism, developed by Ziller and others, spread throughout Germany, through the Herbart Society, it greatly influenced educational content and methods in the United States.

Through his university environment, Froebel developed a mystic philosophy, but made it the basis of remarkable educational practices. He held to organic "unity" in the universe, and to the general method of "self-activity." Besides this (1) "motor expression," he also stressed (2) "social participation," and attempted to realize both principles in (3) a school without books and set tasks, — the "kindergarten." The training here has consisted chiefly in "play-songs," "gifts," and "occupations." The chief weakness of Froebelianism is its mystic and symbolic theory, but it has comprehended the most essential laws of education at all stages. The kindergarten was spread through Europe largely by Baroness von Bulow, and through the United States by Elizabeth P. Peabody and others.

Few tendencies in educational practices today cannot be traced back for their rudimentary form to Herbart and Froebel, or their master, Pestalozzi.

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## CHAPTER XVII

### LATER DEVELOPMENT OF AMERICAN EDUCATION

#### EFFECT OF THE CIVIL WAR UPON EDUCATION

**Prostration of education in the South.**— We have previously (Chapter XV) described the awakening of public education that swept through the United States in the second quarter of the nineteenth century. To a considerable extent this revival proceeded throughout the next decade, and, had it not been for events culminating in the irrepressible conflict known as the Civil War, educational advancement would probably have been continued with unabated zeal and all the chief features that now characterize the American school system might have fully developed within the following quarter-century.

This internecine struggle, however, was bound to upset the progress of education everywhere. It produced a serious setback in the North, and it completely prostrated the schools of the South. The Northern states were retarded for a dozen years in their development of public support and control, improvement of the curriculum and methods, advancement of supervision and teacher training, and extension of secondary and higher education, but at the end of that time their financial strength and educational zeal had returned and development of the schools could begin again about where it had left off. In the Southern commonwealths, on the other hand, the very schoolhouses had in many cases been closed or wrecked,



and educational services of every kind were reduced to a minimum for a generation or more. The resources and educational vitality of this section of the country had largely been sapped and the possibility of creating public school systems appeared for a long time to have vanished.

**Efforts toward educational recovery crushed.**—It seems necessary to describe the terrible conditions in the South following the Civil War, since it has often been assumed that the continued delay in development of its public education was due entirely to its aristocratic attitude and its opposition to the idea of common schools. Undoubtedly progress in public education did not appear there as soon and was not so widespread as in the other parts of the country, but during the period of awakening the new impulse in education had been quite unmistakable in that section. Contrary to general opinion, most of the factors that marked such a development elsewhere—reports, messages, agitation, and leadership—appeared in the Southern states during the late forties and early fifties (see pp 338 f.). Moreover, this educational activity of the South remained in evidence even in the midst of the exigencies of war. As late as 1858 Georgia took a distinct step toward establishing a state system, and later, in its very "secession convention," adopted resolutions looking toward more complete education of its people. North Carolina in 1863, with the Union army actually at its doors, undertook to grade the public schools and provide for the effective training of teachers. In the same year the governor of Arkansas made a successful appeal to the legislature for a state superintendent and property taxation for schools, uttering the famous epigram: "Ignorance leads to slavery; intelligence to freedom."

Hence, in tracing the progress of American education in the United States after the great awakening, we should realize that the long delay in establishing state systems in the South was due in large part to the disasters attendant upon warfare, rather than to an inherent scorn of common schools. Lamentable as was the situation at the close of this tragic conflict, it was greatly aggravated by the plundering and indescribable extravagance inflicted upon the South under the "carpet-bagger" régime in the period of "reconstruction" (1867-1876). For a year or two after peace had been declared, the Southern states put forth heroic efforts to re-establish educational facilities. All their exertions, however, were in vain, for Congress wrested the function of reconstruction from the President and asserted its right to settle the conditions, civic and educational, upon which the seceded states could be readmitted. Among other stipulations they were required to set up "mixed schools," in which white and black children should be educated together. Distressed as they were, the Southern states refused to submit, and a widespread lack of confidence and interest in education was engendered.

This apathy of the South toward public schools remained until the removal of military rule in 1876. Then followed a hard and long-drawn struggle to reorganize the state systems and develop adequate support for education through new constitutions and school laws. The problems involved in such educational rebuilding were both complicated and discouraging. The South was coming to feel that education should be made universal, but it lacked the wealth and facilities to attain this end. Property had diminished in valuation to the extent of billions of dollars, and there were at least two million

children to be educated. The tax on property was often not collectible, and the appropriations for education remained on paper. Indifference and inexperience, too, were aggravated by the bogey of "mixed schools" which a reconstruction legislature or a Congress with millennial zeal in behalf of universal brotherhood might force upon it.

#### GENERAL RECOVERY IN EDUCATION

**The Peabody and Slater Funds.** — The situation, however, finally came to be improved through several agencies. Of these the most important was the Peabody Educational Fund of two million dollars, established in 1867. This endowment, well characterized as "a gift to the suffering South for the good of the Union," was placed by the founder, George Peabody of Salem, Massachusetts, under the management of wise and sympathetic trustees, who undertook to approach the situation in a rational manner and did accomplish tangible results from the start. These trustees appealed to the higher sentiment of the communities and states, and granted the assistance best calculated to secure co-operation and stimulate local effort and initiative. They proceeded to establish and assist state organizations and public school systems in larger centers until these could care for themselves. They paid the salaries of state supervisors for promoting the consolidation of rural schools and created a normal school at Nashville, which was finally (1903) developed into the well-known Peabody College for Teachers. In the same year most of the capital remaining in the Peabody gift was turned over to the Slater Fund. This latter foundation had been established in 1882 for the benefit of freedmen and used chiefly for teacher preparation and industrial education among the Negroes. Through the

establishment of these two great funds and the tact and good judgment with which they were handled, opposition to the education of the Negro population was largely abated and the cause of public schools generally promoted <sup>1</sup>

**Development of the South during the nineties.** — Despite tremendous efforts put forth during the seventies and eighties, the problems involved in developing public education in the South remained most difficult. But by 1890 real signs of prosperity had begun to appear. Wealth in general increased some fifty per cent during the following decade, and, as a result, school revenues grew enormously and the momentum of public education visibly accumulated. While most legislative provisions for state funds and local taxation were at first permissive, interest in the adequate support and extension of school opportunities rapidly developed. Annual meetings of the "Conference for Education in the South," founded in 1898 and composed of able and broad-minded people from both sections of the country, were held at various places in the Southern states, and continually urged the improvement of common schools. At the close of the period, too, the "Southern Education Board" was first created (1901) and then the "General Education Board" (1903) to continue the advancement of public education in the South. State organizations were strengthened, normal schools sprang up everywhere and expanded in scope, and teachers' associations and institutes were generally established.

**Consummation of the American school system.** — Thus at the beginning of the twentieth century the attitude

<sup>1</sup> Besides the reference to Dabney in the Selected Readings at the end of this chapter, see Curry, J. L. M., *History of the Peabody Fund*, University Press, Cambridge, Mass.

toward public education had completely changed in the South, and that section had come into line with the rest of the country. The other older sections — New England and the Middle states — had years before entirely recovered from the war depression and everywhere developed flourishing systems of public schools. The Western commonwealths had likewise long since struck their educational pace, and new states, upon admission, were granted a Federal land endowment, similar to that given their earlier neighbors (see pp. 272 f.), but increased to two sections or more of every township for those who came into the Union in later years. In the first constitution of each state permanent school funds and a regular organization of education were provided, and a genuine public system was practically developed from the start.

Hence, with the developments in the South during the last decade of the nineteenth century, the battle for common schools may be said to have been won and the American conception of public education to have been finally shaped. Many improvements and extensions remained to be worked out, but all the important features of our distinctive institution were by this time in general evidence. The ideals and institutions imported from Europe in the colonial period had gradually been remodeled and adapted to the conditions and needs of America. Schools were generally becoming public and free in the modern sense, and the administration of education had largely passed from private control and even direction by quasi-public societies to the state. School systems were coming to be supported by the finances of the state and the communities, and to include secondary and to some extent higher education, as well as elementary.

## DEVELOPMENT IN SUPPORT AND CONTROL

**Abolition of the "rate bills."** — During this period in American education various developments that had made their appearance during the awakening were continued and extended. In the first place, the protracted efforts to secure universal education and entirely free schools arrived at a climax. The obnoxious "rate bills" tended to disappear during these years. Such an arrangement for supporting public education was out of harmony with democratic ideals and could not be tolerated in the developing cities. One after another in the course of the awakening these centers succeeded in abolishing all charges for school attendance. New York City, for example, as early as 1832 secured legislation to make its schools free, while they were still being supplied by the Public Education Society. Likewise, some ten other cities of the state that had started their systems under similar auspices and the larger cities generally in other sections of the country — Providence, Charleston, Louisville, New Orleans, Cincinnati, Detroit, Chicago — were enabled to abandon the imposition of rates before the opening of the Civil War.

This movement was, in most cases, slow in spreading to the entire state, but we saw that during the awakening Massachusetts (p. 352) and Pennsylvania (p. 351) managed to take this step. Maine and New Hampshire shortly followed the example of Massachusetts. Similarly some of the commonwealths developed from the Northwest Territory — Indiana, Ohio, and Illinois (see p. 353) — were able to drop their rate bills. There was, however, something of a struggle before this could be attained in other states, and complete establishment of free schools was delayed until these years of later development. We saw

that New York had made a start during the awakening, but that in many places a deficiency still remained to be covered by rate bills. Not for many years did the schools become free throughout this commonwealth, but eventually in 1867 the state tax upon property was raised to one and one-quarter mills and two million dollars thereby provided. Thus at last the doors of the common schools were opened wide in the Empire State, and children were no longer stamped as paupers because their parents were unable to pay rate bills.

Three years before this, Vermont had legislated free schools, but Connecticut delayed for another year. As we have previously seen (p. 352), this state failed to keep pace with Massachusetts in the public support of education, despite all the efforts of Barnard. But when that reformer returned to the state as superintendent in 1851, he brought about a large increase in state and local taxation, and under his successors the schools were in the end made entirely free. A state tax of one mill was voted by the legislature in 1856, but even this was not sufficient to avoid the levy of rate bills, and it was not until 1868 that the schools of Connecticut were opened to all without charge. Rhode Island, Barnard's other protégé, abolished rate bills the same year. By that time most states of the North and West had given them up, but Michigan, so progressive in many educational matters, did not legislate free schools until the following year. Last of all in the North, New Jersey fell into line in 1871. The Southern states were, of course, much more delayed in finding means for the full support of their public schools, but by the last decade of the century even they had generally been able to bring this to pass. The victory once achieved, state apportionments and local taxes for schools in most states

have risen steadily year by year, and the methods of distribution have constantly improved in sufficiency and equitability.

**Completion of state control.**—The establishment of state control in education was also completed during this period of later development. As previously indicated (pp. 354 f.), most of the states and territories in the Union had already either organized an independent central administration or assigned the educational functions to an existing state official, and now all remaining commonwealths, together with the new states upon their admission, established a separate office for this purpose. By 1875 the creation of a chief state school officer was an accomplished fact practically everywhere. Before the close of this period the superintendency in thirty-five of the states was a separate office, but in a dozen the duties were still performed as an *ex officio* function. Many of the commonwealths had also established a state board of education upon either an independent or an *ex officio* basis.

In three-fourths of the states the chief official has continued to be known as "superintendent of schools" or "superintendent of public instruction," and in that case is usually elected by popular vote, but in a few commonwealths he has later come to be designated "commissioner of education" and generally to be appointed by the governor, or, even better, by a state board of education. There has also been a continual broadening of our conception of this office and an extension of the range of its functions. Instead of being engaged with purely statistical and hortatory duties, as at first, the chief school officer has gradually been invested with large responsibilities relating to a state program of education, the qualification and certification of teachers, and the maintenance of adequate



opportunities for all pupils in the public schools, and he has often been granted broad judicial powers.

The degree of control assigned the central administration by statute, however, has varied greatly in the several states, and has often had to be determined by the courts. The jurisdiction of state education departments has, however, generally tended to become more extensive and final.<sup>1</sup> A conspicuous case testing the powers of the chief state educational officer occurred in 1897 at Watervliet, New York, in connection with a "deadlock" in the board of education and its consequent inability to select a local superintendent and teaching staff in time to carry on the work of the public schools. Upon the failure of the board to do this, Charles R. Skinner, the state superintendent of public instruction, "directed the board of education of the city of Watervliet to provide the necessary equipment of qualified teachers, janitors, and necessary employees, and to open the schools of that city to the public residing therein on or before the 4th day of October, 1897." The board of education not complying, he then "ordered an employee of the state department of public instruction to proceed to the city of Watervliet and organize the school system of said city as temporary superintendent of schools with a corps of qualified teachers, truant officers, and janitors." When the legality of this action was disputed by the Watervliet board and an injunction sought from the supreme court to restrain the enforcement of the order, Justice Alden Chester held that, since education is a state function .

The state superintendent was justified under the law, when the board refused to open the schools in compliance with his order, to make

<sup>1</sup> Cf. Brubacher, John S., *The Judicial Power of the New York State Commissioner of Education*, Teachers College, Columbia University, New York, 1927.

the subsequent order, which he did, even though that involved the temporary appointment by him of a force of teachers and others sufficient to open and conduct the schools

The Watervliet case supplied a precedent everywhere for holding that the final control of education belongs to the state, and a number of similar decisions sustaining the powers of the chief state official in matters relating to education have since been made in New York and many other states.

**Development of county and city superintendencies.** — The county superintendency, which had also been previously started in a dozen states (pp. 355 f.), was before 1880 instituted by most of the others. The office was, moreover, placed upon a somewhat sounder basis and assigned more important duties. In the South, where the county has always been the natural unit of administration, superintendencies were established early, and they were soon introduced into the new states of the West, where some official was needed in each county to look after the preservation and sale of school lands. As in the case of state officials, these superintendents at first performed chiefly clerical and statistical duties, but they gradually took on a variety of educational powers and functions. The creation of such a position has proved a sound administrative device in making it possible for local units to understand and utilize what the state department of education has to contribute to the improvement of all schools within its jurisdiction. Other types of intermediate units, which have sprung up in some states, have proved equally valuable.

It was during this period of later development, too, that the cities completed the unification of their schools and the foundation of superintendencies. Besides the twenty-

six urban centers in which the office had been established by the opening of the Civil War (see pp. 356 f.), only three others — Albany (1866), Kansas City (1867), and Washington (1869) — created such a position during the next decade, but after that new superintendencies rapidly sprang up as the cities increased in size and wealth, until they existed in practically all of them.<sup>1</sup> In the aggregate, about a thousand centers seem to have organized this office before the close of the period, and the method of selecting the incumbent was constantly improved. In consequence of early efforts to remove the city superintendency from politics, the greatest improvements in educational administration came about through advances made in city systems rather than in those of the county or state, where election by popular vote still prevailed

#### GROWTH OF SECONDARY AND HIGHER EDUCATION

**The Kalamazoo case and the increase in high schools.** — An extension of education on the higher levels, which had advanced considerably during the awakening, was also consummated after the Civil War. High schools grew greatly in their numbers and size, and by 1870 over five hundred of them had come into existence in the various states. This new venture in democratic education was not accomplished without a struggle. Those interested in the academies or opposed to the extension of free education through the secondary stage fought the development of high schools at every step. Even in the West, where there were no academies with established traditions to be overcome and high schools were generally regarded as a natural

<sup>1</sup> Besides the reference to Reller in the Selected Readings at the end of this chapter, see Gilland, Thomas M., *The Origin and Development of the Powers and Duties of the City Schools Superintendent*, University of Chicago Press, 1935

part of the common school system, the right of a school district to support instruction beyond the rudiments at public expense was bitterly contested by conservative or parsimonious people. In 1872 the question of constitutionality was definitely decided by the supreme court of Michigan in the celebrated case brought at Kalamazoo. A taxpayer of that village sought to restrain the school board from levying taxes for a high school, as it had voted to do, and Chief Justice Thomas M. Cooley summed up his decision with the statement:

Neither in our state policy, in our constitution, or in our laws, do we find the primary-school districts restricted in the branches of knowledge which their officers may cause to be taught, or the grade of instruction that may be given, if their voters consent in regular form to bear the expense and raise the taxes for the purpose

The Kalamazoo case has come to be accepted in every state in the Union as the precedent for establishing a complete system of public schools — higher, as well as elementary — and the number of high schools has from that day continued to grow by leaps and bounds.<sup>1</sup> Within a decade it came to be more than eight hundred, and by the end of the century it reached beyond six thousand. As a result of various statutory and social influences, the high school's expansion in numbers became almost indefinite, and the institution was everywhere accepted as part of the state's educational system.

**Growth of colleges and universities.** — During this period of development a remarkable growth likewise occurred in the number of colleges and universities founded. The two hundred in existence before the Civil War became nearly five hundred by the end of the

<sup>1</sup> Davis, Calvin O., *Public Secondary Education*. Chapter IX deals with the era of high school development in Michigan.

century. Most of these new institutions were small denominational colleges, but at least a dozen of them — Swarthmore (1864), Cornell (1865), Lehigh (1866), Boston University (1869), Syracuse (1870), Vanderbilt (1872), Johns Hopkins (1876), Southern California (1880), Catholic University (1887), Clark (1887), Stanford (1891), and Chicago (1891) — have become both substantial and prominent. In these years we also found (pp 370 f.) that a number of leading schools of technology, both in connection with existing universities and on an independent basis, were being established. Likewise by 1870 the number of medical schools had risen to fifty. This period also brought the foundation of state universities to its height. In addition to the twenty commonwealths in which such institutions had already been started, all the others established them, except half a dozen of the original thirteen states — Massachusetts, Connecticut, Rhode Island, New York, Pennsylvania, and New Jersey. All of these latter, moreover, developed flourishing “state colleges,” which may yet be given the status of a state university, as eventually occurred with the state colleges in Maine, New Hampshire, and Delaware.

The development of state universities was greatly promoted by the Morrill Act, which was passed by Congress in 1862 (p. 510) to strengthen college instruction in pure and applied science. In about one-half the states, such as Colorado, Iowa, Kansas, Michigan, North Carolina, and Oregon, this endowment resulted in the foundation of independent colleges, but in the other half, such as California, Illinois, Minnesota, Ohio, Tennessee, and West Virginia, it was used to expand the work of existing state universities or actually became the nucleus in forming such institutions. These universities also gradually en-

larged their services by opening a variety of professional schools — Law, Medicine, Dentistry, Pharmacy, Commerce, Journalism, and Education — as well as the colleges for Agriculture and Engineering established under the Morrill funds, and a number of the state institutions founded in this period — Washington (1861), Kansas (1864), Illinois (1867), California (1868), Nebraska (1869) — have come to rank among the leading universities of the country.

These years also witnessed a great increase in the facilities for the higher education of women. At this time were founded such well-known colleges as Vassar (1861), Wells (1868), Wellesley (1870), Smith (1871), Bryn Mawr (1880), and Goucher (1885) in the East, and Mills (1885) and Rockford (1892) in the West. Moreover, most state universities a short time after foundation opened their doors to women. Iowa led the way in 1856; after a decade Kansas followed, next came Minnesota two years later; and in 1870 Michigan, California, Illinois, and Missouri fell in line. Since then the rest of the state universities have adopted this policy. Likewise a number of Eastern institutions, such as Cornell (1872), Massachusetts Institute of Technology (1882), and Tufts (1892) after a time became coeducational; while other universities, like Boston, Stanford, and Chicago, admitted women from the beginning. Co-ordinate education also developed at several universities through the addition of women's colleges, occasionally known as "annexes." Among these were such institutions as Radcliffe College (1879) at Harvard, H. Sophie Newcomb College (1886) at Tulane, Flora Stone Mather College (1888) at Western Reserve, Barnard College (1889) at Columbia, and Pembroke College (1892) at Brown.

## IMPROVEMENTS IN METHOD AND CONTENT

**Influence of Pestalozzi, Herbart, and Froebel.** — But perhaps the intensive changes in content of public school courses and method of teaching various subjects mark the most noteworthy advances in the era of progress that took place in American education after the Civil War. Even before this period the influence of the Pestalozzian methods had begun to be felt in this country, and now the practice of objective teaching and oral expression was introduced into all subjects and took the place of the old verbal reproduction, and this new spirit was reflected in such textbooks as those of Colburn, Guyot, Parker, and Lowell Mason (pp. 306 f.) An even more definite and noteworthy impulse came through the informal and joyous methods popularized by the Froebelian kindergarten around 1875 and the order and system introduced into instruction by the Herbartian cult in the nineties (see pp. 388 f and 404 f.).

As a result of such educational activity, not only greatly improved methods and textbooks,<sup>1</sup> but also a number of new subjects, were introduced into the curricula of both elementary and secondary schools. Through the Pestalozzian wave such expression subjects as music and drawing were added to elementary education, and, through the importation of the Fellenberg-Pestalozzi developments (pp 312 f.), various types of industrial training came to supplement academic courses and introduce a variety of new institutions based upon vocational or trade education. Somewhat earlier there also started the busy work,

<sup>1</sup> A peculiar development during the Civil War was the series of textbooks — readers, spellers, arithmetics, grammars, geographies, etc., published in the Southern states with distinctive titles including the adjective "Confederate" or "Southern." See *Report of U. S. Commissioner of Education, 1898-1899*, Vol I, Chap XXII

whittling, clay-modeling, sloyd, wood-turning, pattern-making, designing, and other forms of "manual training," intended for educational purposes rather than industrial efficiency, which came into America from the movements started in the Old World by Froebel, Cygnæus, and Salomon (p. 402). Likewise, through the activities of the Herbartians, history courses came to be expanded and taught on a very different basis, and literature to be developed in amount and use by the elementary and secondary schools (pp. 389 f.).

**Contributions of Parker and Harris.** — Innumerable other efforts were made in this period to improve the content and method of American education. One of the most important innovators of these times was Francis W. Parker (Fig 73), to whose combinations and modifications of the material contributed by Ritter, Herbart, and Froebel we have already alluded (pp. 307, 389, and 403). He largely reorganized the entire elementary course as an outcome of viewing education from the standpoint of the child. Contemporaneous with Parker was the great American educationalist, William T. Harris (1835-1909), Superintendent of Schools in St. Louis and later United States Commissioner of Education (Fig 74), who revolutionized materials and methods through his philosophic and psychological study of educational problems. Doctor Harris replaced the old "faculty psychology," which had so largely dominated the thinking of most educators, with a more modern and scientific point of view. By his analysis and interpretation of the functions of the school, he gave it proper setting in the institutions of society, and formulated principles that have proved enduring in education.

**Development of normal schools and professional education.** — With such activity in advancing the control



and method of education, it was but logical that institutions for the training of teachers should be greatly increased. This development seems to have centered very largely around the Pestalozzian movement at Oswego, where the normal school organized by Edward A. Sheldon to train teachers in the object method (p. 308) was adopted by the state in 1866 and quickly became a Mecca for educators and all others interested in teacher



FIG 73 Francis W Parker



FIG 74 William T Harris

training. The graduates of this normal school were eagerly sought, and, spreading throughout the country, became nuclei in the development of similar institutions everywhere. Within a decade of the foundation of the school at Oswego some fifty new public and private normal schools had sprung up in the various states, and about one hundred and fifty others were founded before the end of the century.

Toward the close of this period, too, professional training for teachers began to be offered in state and other large universities, and the expansion of the work

in normal schools and the development of these institutions into colleges were being discussed. In 1860 the University of Michigan established a course of lectures on the training of teachers, but the first actual professorship was created at the Iowa State University in 1873. The lectureship at Michigan was elevated to a full chair in 1879, and during the next decade professorships were founded at the Universities of Wisconsin (1881), North Carolina (1884), Missouri (1884), and Indiana (1886). A professorship was started at Johns Hopkins in 1884, at Columbia in 1890, and at Harvard, Stanford, and Chicago the following year. After that the number increased very rapidly, and by 1900 there had been about two hundred and forty such positions established at colleges and universities in the United States. The subject of these chairs was at first designated by various titles, such as "Didactics," "Science and Art of Teaching," or "Pedagogy," but during the nineties the term came by common consent to be "Education." In 1887 Teachers College was established in New York City. This institution became an integral part of Columbia University in 1898, and later set the example for creating "schools of education" in the universities and developing state and city normal schools into "teachers colleges."

With the development of teacher training in the higher institutions, the courses began to be something more than mere methodology or mechanics of instruction. Attention came to be paid to the biological and psychological nature of the child and to his ways of reacting, rather than to setting fixed and formal ways of teaching each subject. During the last two decades of the century scientific investigations known as Child Study were set up at

many centers, and especially at Clark University in Worcester, Massachusetts, by G. Stanley Hall (1844-1924). Under this caption President Hall (Fig. 75) and his staff offered a training whereby children might be carefully observed and the observations tabulated and measured. The results were also used to furnish insight and material for the training of young people in the normal schools, and marked a decided advance in teacher education. By the close of the century this work was absorbed into the larger field of Educational Psychology, which was then evolving. It represented the first few drops that presaged that invigorating shower in the professionalization of education which was destined to take place in the twentieth century

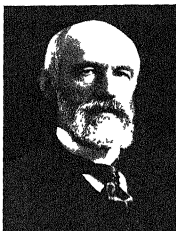


FIG 75 G Stanley Hall.  
 Photograph by Keystone View Company.

### SUMMARY OF THE CHAPTER

The awakening of public education was upset by the Civil War, which retarded the movement in the North and crushed it in the South. Likewise educational recovery was halted by the "reconstruction" régime in Southern states. Through the Peabody and Slater funds, however, conditions began slowly to improve, and during the decade of the nineties adequate support and extension of school opportunities rapidly developed. At the close of the century educational advancement was evident everywhere in the South, as well as in New England, the Middle States, and the new Western commonwealths.

During this period education became free in the cities and "rate bills" were abolished in all the states. State control in education was made complete through the extension of chief school officers and boards of education to all states, and the control assigned a central administration was greatly increased. The establishment of superintendencies in counties and other intermediate units also became general, and the cities completed the unification of their school systems under superintendents.

The development of education on the higher levels was likewise consummated. High schools grew enormously in number and size, and the right of a school district to establish and support them was settled through the Kalamazoo decision. A remarkable growth took place in the number of colleges, universities, and professional schools, and the foundation of state universities came to its height, especially after the passage of the Morrill Act. Colleges for women grew apace, coeducation was instituted in state and other universities, and co-ordinate education was developed.

Intensive changes were made in the content and method of public school courses, and great advancement in textbooks on various subjects took place. Normal schools and professional training for teachers in the universities sprang up everywhere, schools of education and teachers colleges came into vogue, and a scientific study of children and education was undertaken.

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## CHAPTER XVIII

### DEVELOPMENT OF FOREIGN EDUCATION

**Rise of state systems of education in Europe and Canada.** — In previous chapters (X, XIII, XV, XVII) we have witnessed the gradual evolution in America of state systems of universal education out of a sporadic set of aristocratic and ecclesiastical schools, which had first been transplanted from Europe in the seventeenth century. But the development of centralized organization in education has not been confined to the United States. During the past century and a half the leading countries of western Europe, especially Germany, France, and England, and the provinces of the more recently federated Dominion of Canada, such as Ontario and Quebec, have likewise organized central systems of education, similar in some respects to those of the United States. All of these countries have now established universal elementary education free to all, although as yet in not all instances are secondary schools entirely gratuitous. France alone has completely secularized its school system, but the public schools of the other nations, while still including religious instruction, have generally become emancipated from ecclesiastical control and are responsible to the civil authorities.

As we have already noted (pp. 319 f and 331), accounts of the development of educational systems in foreign countries have proved a great source of illumination and inspiration for the United States. Yet in no other country

is the system identical with those in America, but in each case it has been adapted to the genius and social organization of the people concerned. Its characteristics must, therefore, be considerably modified in order to be utilized or prove suggestive to the United States, and can be understood only in the light of the educational history of the particular country to which it belongs. For an intelligent appreciation of these modern school systems, we must, therefore, trace the gradual development to their present form in response to the changing ideals of successive periods

#### EDUCATION IN GERMANY

The earliest of the European school systems to be established upon anything like the present basis appear in the various states of Germany during the eighteenth century. Some centuries before, however, most of the elements in these educational organizations had arisen and passed through various stages of development. The universities in many instances dated back to the general spread of these institutions in Germany, and had passed through the periods of humanism, ecclesiastical reform, and realism (see pp. 120, 158, and 180). Likewise the *Gymnasien* and other classical schools had grown up during the sixteenth century (see pp. 122 f.), and had been modified through the development of realistic studies in the seventeenth century and supplemented by the rise of *Realschulen* in the eighteenth (see p. 180). Finally, the German elementary schools, which came to be known as *Volksschulen* ("people's schools"), arose through the rudimentary school systems established by the princes in various states during the sixteenth and seventeenth centuries (see pp. 154 ff.)



Thus the various levels in German education had sprung up separately, and the system grown chronologically from the top down. First came the higher institutions, then the secondary, and lastly the elementary schools. Up to the later years of the eighteenth century all of these educational elements in the various German states remained almost entirely under ecclesiastical control, but during this period the schools and universities were gradually taken over by the State from the Church. Laws for compulsory attendance at the elementary schools began to be passed, and by the beginning of the nineteenth century the institutions had become civic rather than ecclesiastical.

**The beginning of central control in Prussia.** — Among all the states of Germany, Prussia was the first, largest, and most influential in the organization of universal education. While each of the others is characterized by an educational history and peculiarities of its own, this state may be taken as an illustration of the evolution of German school systems. The rise of Prussia, educationally as well as politically, seems to have been due to the strong Hohenzollern monarchs, despotic in power but thoroughly awake to the interests of their people. Although for nearly two centuries state control of education in Prussia was carried on more or less through the medium of the church, its development was well under way by the seventeenth century. While the "consistory," or board of supervision, was still composed largely of the clergy, the schools were soon (1687) declared not to be church organizations, but to belong to the state.

The first noteworthy developments, however, occurred during the reign of Frederick William I (r. 1713-1740). Parsimonious and narrow as that monarch was in general,

he was liberal toward the education of his people. He established some eighteen hundred elementary schools with money saved from the expenses of the royal household, and endeavored to make attendance in them compulsory. In 1717 he decreed that, wherever schools existed, children should be required to attend during the winter, and in the summer whenever they could be spared by their parents, which must be at least once a week. Twenty years later he had a definite law passed, making education compulsory for children from six to twelve years of age.

His most important contribution, however, consisted in preparing the way for an educational movement that was to be notably developed through his more able son, Frederick the Great (r. 1740-1786). Frederick began by improving the curriculum of secondary education and requiring that all vacancies on crown lands be filled by graduates from the real-school and teachers' seminary that had been founded by Hecker in 1747. But the great step toward a national system was taken in 1763, when he issued his *General School Regulations for the Country*. These regulations required children to attend school from five until thirteen or fourteen, and until they "know not only what is necessary of Christianity, fluent reading, and writing, but can give answer in everything which they learn from the school books prescribed and approved by our consistory." Provision was also made for the attendance of children who had to herd cattle or were too poor to pay the school fees. Sunday continuation schools were to be established for young people beyond the school age.

This decree was two years later supplemented with similar *Regulations for the Catholic Schools in Silesia*,

drawn up by Abbot Felbiger. The fulfillment of such decrees was, however, stubbornly opposed by many teachers, who could not meet the new requirements; by farmers, who objected to the loss of their children's time, and by nobles, who feared the discontent and uprising of the peasants, in case they were educated. The execution of the regulations was still in the power of the clergy, and for some time it proved but little more than a pious wish. But after 1771 the educational work of Frederick was substantially aided by the appointment of Zedlitz as his director of education. Through this great minister village schools were strengthened and enriched, a regular normal school (*Seminar*) was opened at Halberstadt (1778), and the old spirit of humanism was revived in secondary education.

A year after Frederick's death Zedlitz succeeded, even under the reactionary monarch, Frederick William II (r. 1786-1797), in developing an *Oberschulkollegium*, or central school board, in place of the former church consistories. However, while the organization was supposed to be composed of educational experts and Zedlitz was made chairman, the membership was mostly filled from the clergy and the king refused to extend its jurisdiction to the higher schools. But, despite his reactionary attitude, there was published in 1794 a *General Code*, which declared unequivocally that "all schools and universities are under the supervision of the state, and are at all times subject to its examination and inspection." Teachers were, therefore, not to be chosen without the consent of the state, and where their appointment was not vested in particular persons, it was to be made by the state. Teachers of all secondary schools were to be regarded as state officials.

**Foundation of the Ministry of Education and later progress.** — This liberal and comprehensive code met with much opposition from the clergy and the ignorant masses, and for some time, under the well-intentioned but weak Frederick William III (r. 1797–1840), the schools continued to be neglected. The complete humiliation of Prussia in the battle of Jena (1806) and the treaty of Tilsit (1807), however, opened the eyes of that good-natured monarch to the need of universal education, and the reconstruction of the civil administration was accompanied by a more centralized organization of the Prussian school system. The *Oberschulkollegium* was abolished to get rid of the clerical domination that had crept in, and a Bureau of Education was created as a section of the Ministry of the Interior in 1807. A decade later this bureau was erected into a separate Ministry of Education, and eight years after that the general administration of education was, for the sake of greater efficiency, divided into “provinces” which, though subject to the Ministry of Education, were to have considerable independence.

Thus the supreme management of Prussian schools was just about a century in coming into the hands of the state. The policy of centralization has been developing ever since, but while the influence of the church has been constantly diminishing, until recently local board members continued to be chosen largely from the clergy, and religious instruction even now forms part of the course in most schools. Nevertheless, Prussia, in the aggregate, brought about considerable progress in the education of both the masses and the leaders. During the next century great improvement was made in the content and method of elementary schools, and a professional

spirit was introduced into the training of elementary teachers. A corresponding advance took place in secondary education. The courses of study in the gymnasiums and real-schools were definitized and strengthened and a variety of other institutions on this level were developed. Special preparation came to be required for secondary teaching, and an examination in the content subjects taught by secondary institutions and in special professional courses had to be passed by all entering this field.

**Development of education since the World War.** — In Prussia, as in most of the principal states of Europe, the elementary and secondary systems grew up quite separate and distinct from each other. The universities continued the work of the gymnasiums and the real-schools, but these latter institutions paralleled the work of the *Volks-schulen* rather than supplemented it. After nine years of age it was practically impossible for a pupil to transfer from the elementary school to a gymnasium or a real-school in the way that one naturally passes to the high school after finishing the grades in an American state system. The elementary schools were gratuitous and were attended mostly by children of the lower classes, while the secondary schools charged a tuition fee and were patronized by the well-to-do groups. Even the training preliminary to the first year of a gymnasia institution was generally obtained in a special type of fee school called a *Vorschule* ("preparatory school"), although occasionally the first three years of a people's school were used to serve the purpose.

Thus the Prussian school system has long had two tracks (seven or more, if all school types of the present elementary and secondary systems be counted) rather

than a single track, as in the United States, and the distinction between the two has been one of wealth and social status rather than of educational grade and advancement. But for more than a century there has existed among the Prussians the thought of installing an *Einheitsschule* ("common school"), which should serve as basis for a reorganization of the entire educational system. By such means there would be a common foundation for all pupils through their first six years of schooling, and after that the educational institution each one attended would depend upon his intellectual capacity and purpose in life. Under this plan, it has been felt, the national and cultural unity of the various classes and parties would be preserved, and the choice of a differentiated curriculum and type of school could be postponed until something more definite was known of the pupil's interests, ability, and needs. The organization of such a unified system was first conceived by Süvern, director of the Bureau of Education during the depressing period of Napoleonic conquest, when there was special need of building a national unity. While the concept of an *Einheitsschule* was not then put into effect, it never altogether perished and has been revived in all subsequent periods of national need.

This was especially the case during the emergency of the World War (1914-1918), although the idea was vigorously opposed by teachers in secondary institutions and by conservative officials, members of the clergy, and people of wealth. Nevertheless, when the republic was set up in 1919, it was recognized, as it had been a century before, that if Germany were to recover the standing she had lost, she must reorganize her educational system in keeping with this theory. The conception of a deified

state as an entity outside its citizenship had largely given way to the democratic view of a state existing through the will of its members, and the new constitution mandated that education should be adapted to each individual and provision made for the various occupational groupings. Although these objectives were never carried out by federal legislation, their spirit was embodied in laws that began to be enacted by the several states. The *Einheitsschule* was nowhere completely realized, but efforts were made to unite the various institutional types in an organic system of education.

So, while not able to create an external unity in organization and course of study, Prussia did succeed in introducing an internal unity of purpose and culture into its multiplicity of institutions. Under the law of 1920 the *Vorschule*, clearly a class institution, was abolished in Prussia, and a *Grundschule* ("foundation school"), constituting the first four years of the *Volksschule*, became a basis for all secondary instruction as well. To this extent the choice of one's course was postponed. Likewise it was arranged, by reducing the tuition fees and adding largely to the number of scholarships, that gifted pupils in the elementary schools might enter a secondary institution at various stages and obtain the benefit of this level of instruction. Two new types of secondary institutions, moreover, were created to afford an avenue of admission to the universities for those who had started in the elementary schools. Thus education in Prussia was largely reformed, but not upon a completely new basis. It retained the historic school types that had stood the test of time, but supplemented them with others that were needed. The school that each child should attend was determined through interest, ability, and

need, rather than wealth, caste, and convention, and transfers from one type of institution to another were made easier and more natural.

With reversion to the view of a totalitarian state in 1933-1934 through the success of the National Socialist party led by Adolf Hitler, one might have expected considerable change to take place in the school systems of the various states. As yet, however, no formal reorganization has been made in Prussia, except for the establishment of a certain type of secondary "institute" upon the Nazi basis (see p. 450).<sup>1</sup> The change under Naziism seems thus far to be in the spirit, rather than the organization, of education. The objective of education is no longer the development of personality but the strengthening of the state, and the adaptation of educational institutions to individual ability and needs has been largely subordinated to the inculcation of acquiescence in whatever ideals are set up by the authorities. But until some sweeping order for a reorganization has been made, it may be assumed that the framework of education and the various school types will remain unchanged in Prussia.

**State administration of Prussian education.** — The central educational authority in Prussia is now known as the National Ministry of Science, Education and Popular Culture, and the minister is appointed by the President

<sup>1</sup> See Abel, James F., "Nazi Education" in *School Life*, Vol. XIX, pp. 113 ff (February, 1934), Kandel, I. L., "Education in Nazi Germany" in *Annals of the American Academy of Political and Social Science*, November, 1935, International Bureau of Education, *Press Communication*, January, 1936. The most complete description of the changes that have taken place under Nazi régime is to be found in Kandel's article on "The Making of Nazis" in *Educational Year-book of the International Institute of Teachers College for 1934*, reprinted in *Teachers College Publications*, 1935, and may be supplemented with an article by John W. Taylor in *Internationale Zeitschrift für Erziehungswissenschaft*, July, 1936.



of the Republic.<sup>1</sup> The ministry, which is divided into a dozen sections, including such fields as elementary, secondary, higher, and teacher education, each under its own director (*Referent*), has general charge of the work throughout the state. Some special phases of education, however, are administered by other departments; for example, commercial education comes under the Ministry of Commerce, and agricultural under the Ministry of Agriculture. It is the duty of the Ministry of Education to issue decrees dealing with the internal management of schools, courses of study, and examinations; approve textbooks and school materials, formulate regulations and render decisions; prepare legislative bills and a budget; and appoint certain of the higher educational officials.

An educational authority subordinate to the ministry is found in the Provincial School Board (*Provinzial-schulkollegium*). The membership of each of these boards is largely composed of educators and legal authorities, with a chairman (*Oberpräsident*) appointed by the minister. Besides general supervision of all schools in the province, it has special charge of secondary education and general jurisdiction over the discipline of elementary teachers. The provinces are, in turn, divided into counties (*Regierungen*), each of which has a Section for School Affairs. Of this division the county president is chairman *ex officio*, although the director of the schools

<sup>1</sup> By decree of May 1, 1934, a Federal Ministry for Science, Education, and Popular Culture (*Reichsministerium für Wissenschaft, Erziehung, und Volksbildung*) was established. On the following May 11, a second decree transferred from the Ministry of the Interior to the new ministry a considerable number of duties relating to scientific matters, both foreign and domestic, and all matters of general interest to schools. The former minister of education for Prussia became head of the new National ministry. As even under the empire Germany had no central ministry of education, the establishment of such an office under Nazi régime argues a great change in certain fundamental aspects of thinking.

section usually serves in his place. Each section is administered by a board composed of administrative, educational, legal, medical, and architectural councilors, appointed by the county president. The county boards have general supervision of elementary schools and the appointment of elementary teachers, and administer school moneys and property within the county. Finally, the counties are divided into inspection districts (*Schulkreise*), which are directed in each case by a "school councilor." Under the constitution of the Republic, this position has come to be generally filled by a schoolman, which up to that time had been the case in less than one-third of the districts. The school councilors, appointed by the minister, have direct supervision over all elementary school affairs, including those of the continuation schools, and give approval to curriculums and lesson plans.

Local administration of educational affairs was until recently in the hands of a "school board" (*Schuldeputation*) in the case of cities, and of a "school committee" (*Schulvorstand*) in the rural districts. Besides civic officials, these bodies contained representatives of the teachers, public, and churches, and had considerable authority over appointments, buildings, and budgets, especially in the cities. But in 1935 both school board and committee were abolished by law, and the entire responsibility for local education vested in the mayor of the city or the president of the community, who appoints the equivalent of a superintendent of schools and members of an advisory council (*Beirat*)<sup>1</sup>

**The Prussian elementary schools.** — After this review of the present organization of the Prussian system, we may

<sup>1</sup> See *Deutsche Wissenschaft, Erziehung, and Volksbildung* (the official publication of the ministry), April 20, 1935, pp. 71 ff.

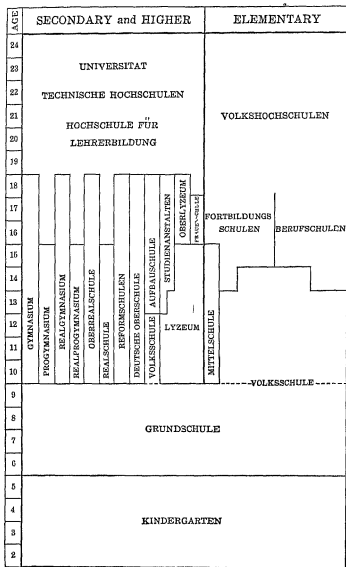


FIG. 76 Diagram of German education

examine more in detail the different levels of education. Looking first at the elementary system (Fig. 76), we note that the lower four years of the *Volksschule* ("people's school") are furnished by the *Grundschule*, which now serves as a primary school common to all types of institutions. Four (occasionally five) upper grades complete the elementary work, and the only further training<sup>1</sup> that a graduate of such schools ordinarily obtains comes through the *Fortbildungsschulen* ("continuation schools"), the *Berufsschulen* ("vocational schools"), or the *Volks-hochschulen* (advanced education for adults). The *Volksschule* is the most important school in the Prussian system and is attended by about ninety per cent of the children. Separate schools are maintained for the sexes, whenever there are three teachers or more, and women are never allowed to teach boys. By a decree of 1933 all non-sectarian elementary schools are to be closed as fast as the children now attending them leave, and all pupils must thereafter enter schools of their own denomination.

There are also *Mittelschulen* ("middle schools"), which exist side by side with the *Volksschulen*. While they are two years longer in course than the average *Volksschule* and may include training in a foreign language — usually Latin for boys and French for girls — during the last three years, they avoid the academic attitude of secondary schools and generally provide training for intermediate positions in agriculture, industry, and commerce. Their course is differentiated in its vocational offerings according

<sup>1</sup> Since 1934 pupils have been required upon graduation from city *Voll-schulen* to spend a ninth year in the country (*Landschuljahr*) at camps or farm homes, where the boys may learn the routine of the farmer and the girls that of the farmer's wife. The Government hopes thus to build loyalty to Nazi principles, appreciation of the peasantry in maintaining a food supply, physical health and endurance, and sound character and deep piety. See Kandel's *Making of Nazis*, op. cit., pp. 495 ff.

to the needs of the community in which the school is located. The middle school charges a small tuition fee, and there has been some sentiment in favor of abolishing it on the ground that it is a class institution tending to draw away abler pupils from the people's school, but it would now seem to have a definite place of its own.

The *Fortbildungsschulen* are for graduates of the *Volkschulen*. They generally furnish a practical training for the lowest positions in commerce or industry, although there are some general continuation schools, which afford a review and extension of the elementary school subjects together with a theoretical insight into business life. These schools were largely started by chambers of commerce, since the educational authorities were too conservative to suggest their introduction. Part-time attendance is now required from fourteen to eighteen years of age, except where pupils are physically or mentally immature, and usually covers from two to four hours a week. The work has for many years been given in the morning or afternoon, and employers are required to allow their apprentices the necessary time off without reduction of pay.

**Secondary schools.** — The secondary schools in Prussia attended by the two sexes differ somewhat from each other in name and course. Historically the main types for boys have been the *Gymnasien* (see pp. 122 f.), with classical languages as their main feature, and the *Realschulen* (see p. 180), characterized by the natural sciences and mathematics and a larger amount of modern languages. For more than a century after the first real-school was opened in Berlin by Hecker (1747), this type of institution had only six years in its course, and was considered inferior to the nine-year gymnasium. By the ministerial decree of

1859, however, two classes of real-schools were recognized. Those of the first class had a course of nine years, and included Latin but not Greek. They were given full standing as secondary schools, and graduates were granted admission to the universities, except for the study of theology, medicine, or law. The course in the second group of these institutions contained no Latin, and remained but six years in length.

In 1882 the compromise character of the course in the first class of real-schools led to their being designated *Realgymnasien*, while the second class in some instances had their work extended to nine years and became known as *Oberrealschulen*. The graduates of the latter were then allowed the privilege of studying at the universities in mathematics and the natural sciences. Since 1901 university courses have been thrown open to graduates of any of the three types of nine-year secondary schools, except that, to be eligible for theology, one must have completed the course of a gymnasium, and for medicine at least the course of a real-gymnasium. Besides these schools which have been mentioned, in rural districts where a complete course cannot be maintained, there are often secondary institutions that do not carry the student more than six years. These are known according to the curriculum as *Progymnasien*, *Realprogymnasien*, and *Realschulen* (Fig. 76). The first two classes are far less common than institutions with the longer course of the same character, but the *Realschulen* are nearly twice as numerous as the *Oberrealschulen*.

Since these three types of secondary institutions are so distinct from each other, it is evident that for a long while a parent was forced to decide the future career of his boy at nine years of age — long before his special ability could

be known. If he once entered a real-school, he could rarely transfer to a gymnasium, because Latin began in the lowest class of the latter course, nor could he enter the gymnasium from the real-gymnasium after twelve, since he would have had no Greek. To overcome this objection, in the last decade of the past century efforts were made to delay the irrevocable decision by grouping all three courses as one institution and making them identical as long as possible. In secondary schools of this new sort, French was usually the only foreign language taught for the first three years. Then the course divided, and one section took up Latin and the other English. After two years more a further bifurcation took place in the Latin section, and one group began with Greek, while the other studied English. The institutions permitting this delay in choice were generically known as *Reform-schulen* (Fig. 76), and the plan first became prominent at Frankfurt in 1892.

There is still a general belief that the choice of course should be postponed as long as possible, but since the establishment of the republic this has been accomplished by postponing entrance to secondary schools until the age of ten, by rendering transfers easier in the case of existing institutions, and by developing two additional secondary schools. These new institutions are the *Deutsche Oberschule* and the *Aufbauschule* (Fig. 76). The *Deutsche Oberschule*, which was started in 1924, aims to give a nine-year course based upon the resources of German culture but adequate for admission to scientific study in the universities. While the curriculum emphasizes the history and literature of Germany, together with social, philosophic, and esthetic subjects, it usually adds one or two modern languages. The *Aufbauschule*, consisting of a

six-year course based on the first seven years of the *Volkschule*, was created about the same time as the *Deutsche Oberschule*, and renders university training available to pupils who have taken the ordinary elementary course. It was largely established in rural districts, where secondary facilities were meager, in buildings formerly occupied by the elementary normal schools (see p. 454). The course and methods of these two new types of secondary institution are still somewhat in a formative state, but they have already helped Germany to secure the benefit of more of her genius at a time when this is sadly needed.

About a decade later another type of secondary school, known as the *Nationalpolitische Institut* ("national-political institute"), began to be developed. This is a boarding school and is intended to prepare leaders for the Nazi conception of society and government. Through it have been started some new traditions in education. The pupils of these institutions are not selected according to their parents' means or social status, but because of their own personal capacities. Besides an entrance examination, they must successfully pass a probationary period. Even then the youths are not assured of positions as leaders, since it is only through actual experience that the future leaders can be revealed. To these gifted students are afforded vocational guidance and professional assistance, with a view to placing each in the position where he can best serve the state.

Among the objectives sought by a "national institute" are good comradeship, order, and discipline, and the pupils are trained in scientific spirit, community life, and practical service. "Practical service" does not aim, as has often been the case in school life, at accustoming the boys to keep quiet, but rather at moving quickly and ener-



getically. Besides the usual gymnastics, sports, and open-air exercises, provision is made for fencing, riding, rowing, sailing, swimming, motoring, and aviation. As a rule, the curriculum resembles that of the nine-year *Deutsche Oberschulen*, but some of these institutions admit gifted pupils from the *Volksschulen* and have a course of six years not unlike the *Aufbauschulen*. Two of them have copied the curriculum of the classical gymnasium. All these new institutes come under the direct supervision of the minister of education.

Until the last decade of the nineteenth century the education of girls seldom went beyond the level of the middle schools, and graduates were not eligible for admission to the universities. In 1890, however, an association of teachers was formed to advance the professional standing of women, and four years later succeeded in having regulations enacted whereby secondary institutions for girls were standardized and given official recognition. These schools were to offer two foreign languages and the course was to cover nine years, but, inasmuch as this period included the preliminary training for a gymnasial institution, they were even then three years short of the secondary schools for boys. In 1898 the length of the course was increased to ten years as the standard, and a decade later, through an imperial decree, Prussia was empowered to add three years to the course of secondary institutions for young women. Thus the sexes were placed almost upon a parity in education. In 1923 women's secondary education was further broadened and based upon the *Grundschule*, although little change was made in the fundamental content of the course.

The full-fledged secondary schools for young women are now known as *Studienanstalten* ("institutions of learn-

ing"), and include two types, paralleling the *Gymnasien* and *Realgymnasien* respectively (Fig. 76). These institutions are, however, usually based upon the first three or four years of a *Lyzeum*, which furnishes a six-year course beyond the *Grundschule* and is of much the same type for girls as is the *Realschule* for boys. The work may continue upon the basis of an *Oberrealschule* through three additional years in an institution known as *Oberlyzeum*, or through a one- or two-year course in home economics, the care of children, and social welfare, known as a *Frauenschule*. In 1917 an *Oberlyzeum* of a more academic type was also created by devoting the last three years to general culture. Later *Aufbauschulen* (see pp. 449 f.) were started for girls as well as for boys. Thus some half-dozen avenues for entering the universities have now been opened to women.

**Higher education.** — Of the twenty-five universities within the borders of Germany, almost one-half are in Prussia. Like other stages of education, these institutions have been emancipated from ecclesiastical control. They may be regarded as part of the national system of education. The university is now co-ordinate with the church, as both are legally state institutions. Universities can, therefore, be established only by the state or with the approval of the state. In general, however, they are not controlled by legislation, but through their own charters and the decrees of the minister of education, although their freedom of teaching has been seriously crippled under Nazi régime. As their income from endowments and fees is very small, they are for the most part supported by the state. Until the Nazi régime the universities were managed internally by the "rector," or president, and the "senate." The rector was chosen annually from those

holding the rank of full professor, with the approval of the minister, and the senate was an executive committee composed of representatives from the various faculties. Each faculty had its own dean. Since 1933 all this administrative autonomy has been abolished. The various prerogatives and powers of senate and deans have been concentrated in the rector, who is now appointed by the minister and has sole control under that central official.

During the nineteenth century new institutions for instruction in science applied to practical and technological purposes were developed from technical schools of a more elementary character. While known as "technical high schools" (*Technische Hochschulen*), they are institutions of higher learning, exist side by side with the universities, and require the same length of preparation in a secondary school. They include schools of engineering, chemistry, ship-building and marine engine construction, architecture, art, music, forestry, agriculture, commerce, veterinary medicine, and pharmacy. The graduates of these *Hochschulen* have become technologists, investigators, consultants, inventors, and business leaders in Germany and throughout the world.

**Teacher preparation.** — For more than a century teaching has been recognized as a profession in Prussia and the rest of Germany. Until the time of the republic, the prospective teacher in the elementary schools of Prussia, after completing the *Volksschule*, took a three-year course in a normal school (*Seminar*), preceded by three years in a preparatory institution (*Präparanden-anstalt*). While these two schools were separate in Prussia, they were closely connected and formed an organic whole in their courses of study. After 1901 the curriculum in the combined institutions was standardized by ministerial decree,

and included a review and extension of the academic field, religion, a modern language, and professional courses and practice school (*Ubungsschule*) work. This training was very thorough, but not broad, and was of a *memoriter* and disciplinary character.

After the establishment of the republic, however, Prussia began to require even elementary teachers to be graduated from a secondary school, which had become so much more practicable (see pp 439 ff), and to be then trained at an institution of university rank. In 1921-1922, the preparatory institutions, and in 1926 the normal schools, were closed by ministerial decree. Under the republic some of the states, like Saxony, assigned the preparation of elementary teachers in part to the universities, but Prussia created special "schools of education" (*Padagogische Akademien*), on a level with the universities, for the purpose. These institutions were devoted entirely to professional training and offered two years of work in educational subjects and in observation and practice teaching. Upon graduation the students were given temporary certification, and until 1930 this could be made permanent through an approved course in a "co-operative study group" (*Arbeitsgemeinschaft*). Since then permanent appointment can be obtained only by passing a second examination of a purely professional and practical character after two to four years in service. This organization of teacher preparation has been retained by the Nazi government, except that the institutions are now called "teachers colleges" (*Hochschulen für Lehrerbildung*), and then aims and spirit have been completely changed.

Teachers for the secondary schools in Prussia have for a long time been required first to graduate from a secondary school and then to attend a university for at least eight

semesters. They must next pass a written and oral "state examination" upon various branches of education and philosophy, and upon three majors, or two majors and one minor, in subjects they expect to teach, and produce two satisfactory essays in those fields. Not until then do they begin their professional education, which up to 1917 consisted of a year of pedagogical training (*Seminarjahr*) and a year of trial (*Probejahr*) in actual teaching, but since then has been integrated in a two-year unit of preparation (*Vorbereitungsjahre*). The work consists of general and special educational study, together with practice work in two secondary schools. At the end of the second year the candidate takes a written and oral professional examination, which includes conducting a thirty-minute lesson on a given subject. If he is successful in this test, he is placed on the eligible list as a substitute (*Studienassessor*), and, after a length of time depending somewhat upon circumstances, may be appointed as a regular secondary teacher (*Studienrat*).

#### EDUCATION IN FRANCE

**Development of universal education through the Revolution.** — The development of a centralized system of education in France began almost a century later than in Germany. During the eighteenth and the early nineteenth century the different monarchic powers were not at all favorable to training the masses, and popular education was badly neglected. It required several revolutions in government and the establishment of a permanent republic to break the old traditions completely. The earlier history of France, however, was not radically different from that of Germany. The medieval program in the higher institutions had been replaced by humanistic and

realistic tendencies. A chair of Greek had been established at the University of Paris (1458), the College of France had been founded (1530), and the Jesuit colleges had begun to appear by the sixteenth century, and a further enrichment of education took place through the introduction of sciences in the seventeenth.

Then, just after the middle of the eighteenth century, the revolutionary spirit began to manifest itself. The *Émile* (see p. 218) made its protest against the artificial education of the times (1762), the Jesuits were suppressed in France (1764), and, at the request of the Parliament of Paris, a general plan for the reorganization and centralization of education was presented by Rolland (1768). Up to this time little attention had been given to elementary education, but this plan of Rolland's, while not adopted, did recommend the establishment of universal education and an adequate number of training schools for teachers.

With the outbreak of the French Revolution, the reforms became even more extreme. The Constitutional Convention in 1793 abolished all the old educational organizations, including the University of Paris and the "colleges" or secondary schools. Then followed the confusion of revolutionary legislation. Each of the three revolutionary assemblies had its own scheme of popular education, and that of Daunou, formulated in 1795, among other things introduced the idea of "central schools" to furnish universal secondary education. The year before, a system of department normal schools, with a higher normal school at Paris, was also proposed.

During the consulate of Napoleon (1802-1804), the "central schools" were replaced by the modern *lycées*, and the communal *collèges* were likewise recognized as

secondary schools. When he had become emperor Napoleon went further, and ordered all the *lycées*, *collèges*, and faculties of higher education to be united in a single corporation, dependent upon the state and known as the "University of France" (1808). This decree of centralization divided the country into twenty-seven districts for educational administration, called "academies," each of which was to establish university faculties of letters and science near the principal *lycées*.

**Universalization and secularization of education.** — This organization, however, did not include elementary education, and little attempt was made to provide for schools of this grade before the reign of Louis Philippe (1830-1848). Upon the advice of his great minister of education, Guizot, that monarch organized primary education, requiring a school for each commune and starting higher primary schools in the capital of each "department" and in "communes" of over six thousand inhabitants (1833). He also instituted inspectors of primary schools, and required the department normal schools to come under the more effective control of the state authorities. The plan for higher primary schools was never fully realized, and the reactionary law of Falloux (1850) encouraged the development of denominational education and the licensing of teachers with scant qualifications.

Guizot, however, had given a permanent impulse to popular education, and early in the third republic foundations for a national system of education were rapidly laid. Schools were brought eventually into the smallest villages, and before long elementary education was made free to all (1881) and compulsory between the ages of six and thirteen (1882). Likewise the higher primary schools were re-established and extended (1882). To provide trained

teachers, every department was required to establish a normal school for teachers of each sex (1879), and two higher normal schools, one for women and one for men, to train teachers for these departmental normal schools, were opened by the state (1887 and 1889).

Secularization of the school system also gradually took place. First, religious material in the course of study was replaced by civic and moral instruction (1881). Next, the teaching force was secularized by providing that members of the clergy should no longer be employed in the public schools (1886) and by recognizing public school teachers as state officers (1889). Finally, the schools themselves were completely secularized by compelling the teaching orders to report to the state authorities (1902) and afterwards by closing all the schools directed by them (1904). Thus almost within a generation universal education was established in France and brought completely under state control.

**Centralized administration of French education.** — The centralization of education is even more complete in France than in Germany. The control has never been vested in a number of individual states, but has always been assumed by the national government itself. The supreme head of the system, who has since 1932 been known as the "minister of national education," is selected by the prime minister with the approval of the president of the republic. The minister of education nominates all the higher educational officials, and has a wide range of legislative as well as executive duties. He is assisted by a permanent staff of administrative officials, of which the chief are seven directors, who have charge of various fields of education and of accounting. All these contain several bureaus, each of which has special functions. There are likewise some fifty-eight "inspectors-general,"



who serve as liaison officers between the ministry and the various educational institutions of the country. The one check upon the administrative power of the minister is found in the requirement that he shall consult with an advisory body known as the Higher Council of Public Instruction, consisting of fifty-six members, in all matters relating to curricula, methods, textbooks, examinations, discipline, and administrative regulations.

For the purpose of extending the central administration to every part of the country, the nation is divided into seventeen "academies." Each academy has a university of its own, at the head of which is a "rector," appointed by the president on the recommendation of the minister. The rector not only directs the university, but is in charge of all the schools, although he generally limits his attention to the university and the secondary, higher primary, and normal schools. Next to the rector in rank comes the "academy inspector," who is appointed by the same authority. There are ninety-eight of these inspectors — at least one for each department — and they are held completely responsible for the efficiency of the secondary and elementary schools within their jurisdiction. The academy inspector appoints teachers for a probationary period, and recommends them to the prefect of the department for permanent positions. He is assisted in the conduct of elementary education by primary inspectors.

The "communes," or localities, have but meager educational authority. The mayors, however, have charge of the provision and supervision of the school buildings and of compulsory attendance and the school census. In these duties they are assisted by a communal school board appointed by the academy inspector and the council of the commune.

**The elementary system.** — The basis of the present organization of elementary education was formed under the organic act of 1886, which codified all laws and decrees relating to "primary schools." This elementary system includes not only the "primary school" (*école primaire*), but the "higher primary school" (*école primaire supérieur*) which continues it, the "maternal school" (*école maternelle*) which precedes it, and certain variants of these institutions (Fig. 77).<sup>1</sup> The maternal school is for pupils from two to six years of age, the primary for those from six to thirteen or possibly fourteen,<sup>2</sup> and the higher primary from thirteen or fourteen to sixteen. Attendance is compulsory only in the primary school, but if a maternal or a higher primary school has once been established in a commune and receives state aid, it must be maintained for a goodly period — a decade in the case of the former and thirty years of the latter.

Separate primary schools for the two sexes are maintained in all communes over five hundred in population, where the boys are taught by men and the girls by women. In the smaller places where the schools are coeducational, women are employed. Many of the primary schools of the country have but one teacher, but where there are two or more, there must be a principal (*directeur* or *directrice*), who gives more or less time to supervision. The course of study is divided into four levels — "preparatory," "elementary," "middle," and "higher." Each of them covers a period of two years, except the "preparatory," where there is but one, although sometimes the pupil finishes the "higher" in a single year. Usually the second

<sup>1</sup> The primary normal schools are also included in this system, but they will be treated separately under "teacher preparation."

<sup>2</sup> The age of compulsory education was raised to fourteen by law in June, 1936.

AGE	SECONDARY AND HIGHER	PRIMARY
24	UNIVERSITÉ  GRANDES ÉCOLES  ÉCOLE NORMALE SUPÉRIEURE	COURS d'ADULTES  ÉCOLES PRATIQUES
23		
22		
21		
20		
19		
18		
17	LYCÉE OR COLLÈGE	ÉCOLES de MÉTIERS
16		ÉCOLE PRIMAIRE
15		
14		
13		
12		COURS COMPLÉ MENTAIRE
11		COURS SUPÉRIEUR
10	CLASSES PRÉPARATOIRES	COURS MOYEN
9		ÉCOLE PRIMAIRE
8		
7		
6		COURS ÉLÉMENTAIRE
5	CLASSE ENFANTINE	COURS PRÉPARATOIRE
4		ÉCOLE MATERNELLE
3		
2		

FIG. 77 Diagram of French education

year consists of a review and extension of the work of the first. The entire curriculum is prescribed by law and decrees and regulations of the minister of education, and, beside the three R's, history, geography, and elementary science, includes drawing, singing, manual training (boys) or needlework (girls), and gymnastics or physical training. Every school is also required to furnish civic and moral instruction.

In the higher primary schools are offered various courses, both general and vocational, and much latitude is allowed to the interests and needs of each community. The general courses may be used for admission to the elementary normal schools, and the vocational work generally leads to further industrial, homemaking, or agricultural training. The first of the three (sometimes four) years is common to all courses and includes quite a wide range of liberal studies, such as French language and literature, foreign languages, general history, algebra and geometry, physical and natural sciences, and hygiene. In every course, too, civics, economics, and practical law, together with physical and military training, are required as a preparation for citizenship. Likewise each higher primary school must make provision for a library, laboratories, workshops, museum, and gymnasium. As a matter of fact, these schools belong to the secondary rather than the elementary system, and are distinguished from it only on the basis of being more practical than academic. If the ideal of a unified system (*école unique*) ever prevails, this level of education will probably be classed as secondary.

In many places where their means are too limited to establish higher primary schools, a "supplementary course" (*cours complémentaire*) is offered to pupils when they have finished the elementary school. This may cover

a period of two years, and, except that the period is shorter, is of much the same nature as the higher primary courses. Vocational work is also offered through trade schools, adult courses, and part-time or continuation schools for three to five years beyond the lower or higher primary schools.

The maternal schools were started in the time of Guizot, but did not receive their present name until half a century later. Many reforms have been wrought in their construction, equipment, courses, and qualifications for teachers, especially under the detailed regulations of 1927, and the tendency is now away from the traditional and formal school work toward greater freedom of child activities and development. The work includes exercises with balls and cubes, sticks and rings, paper-cutting and straw-weaving, and other material found in kindergartens, but much of the time is given to teaching the youngsters to read, write, and cipher. In the smaller communes, where a maternal school cannot be afforded, an "infant class" (*classe enfantine*) for pupils between five and six may be attached to the primary school, to serve the purpose.

**The secondary system.**—The secondary schools of France are not superimposed upon the primary, as in the United States. The secondary system as a whole is quite separate and distinct, but since 1925 transfers from the higher primary to the secondary schools have been greatly facilitated.

Secondary training has since the time of Napoleon been furnished chiefly by the *lycées* and the communal *collèges*. The communal *collèges* differ from the *lycées* mostly in being local, and are maintained by the commune with some aid from the state. They do not have the same standing

as the *lycées*, and equal qualifications are not required of their teachers. Until 1880 no *lycées* or communal *collèges* had been established for girls, and convents and private schools furnished the only means of female education. Then, after secondary institutions were established for young women, they were two years shorter in course than those for young men until 1923, when secondary courses leading to the *baccalauréat* were opened for women. Coeducation generally is not allowed, but under certain conditions girls may be admitted to boys' schools in limited numbers where they have none of their own.

About the middle of the nineteenth century the curricula of the *lycées* were completely reorganized, and some elasticity was introduced into them through a bifurcation into the literary and scientific courses. During the third republic further elections were introduced until finally (1902) four distinct courses — the Latin-Greek, the Latin-modern language, the Latin-science, and the modern language-science — were established, all leading to the same baccalaureate. After the World War a reactionary minister of public instruction undertook (1923) to limit the *lycée* courses to those requiring Latin, but two years later the modern language and science options were restored and the system of secondary education was established upon the present basis. Besides the four regular courses, the leading *lycées* and *collèges* afford a special preparation for institutions like the military school at St. Cyr and the naval school at Brest. Some institutions likewise offer a short course of three or four years in modern languages and science that in function closely approaches that of the German *Realschulen*.

The curriculum of a *lycée* or *collège* ordinarily takes the boy from the age of eleven to that of eighteen or nineteen.

While pupils may enter a secondary school from the primary system, many *lycées* and *collèges* maintain preparatory classes (*classes préparatoires*) paralleling the work in the elementary schools, to train their pupils from six to eleven years of age. However, pupils sometimes transfer to the preparatory classes from the primary school at ten. Most of the subjects in a *lycée* or *collège* are the same for all sections during the first six years, but in the first year the student must choose between Latin and a modern language, in the third year he must select either Greek or a second modern language, and in the fifth year further elections must be made in accordance with the course he wishes to take. At the end of the sixth year the first examination for the baccalaureate is taken; and in the last year, where an opportunity to specialize in philosophy or mathematics is afforded, the student undergoes his final examination. He is then eligible for admission to the university, but he may in some *lycées* obtain an additional year of specialization, if he is planning to enter one of the great institutions of higher education in Paris outside the university.

Education in a *lycée* or *collège* was not free until recently, but the income from tuition fees was so small as to cover but a fraction of the cost, and the rest was contributed by the state. To enable gifted pupils of limited means to secure a secondary education, a large number of scholarships have now been created, and in 1930 a plan was put into operation to abolish tuition fees altogether, beginning with the lowest class of the *lycées* and *collèges* and proceeding year by year. This process was speeded up and free tuition was attained in 1933.

**The institutions of higher education.** — More than one-half of the universities established in various "academies"

by Napoleon were suppressed as soon as the monarchy was restored. But about half a dozen were reopened in the reign of Louis Philippe, and were gradually improved by the addition of new chairs. Beginning in 1885, a number of decrees established a general council of faculties in each "academy" to co-ordinate the different courses and studies, and in 1896 a law was passed through which a university has now been established in each of the seventeen "academies." These universities differ greatly in size, but all grant the *licence* (master's degree) and the doctorate. The title of *agrégé* ("fellow") may also be awarded to a fixed number of licentiates each year through competitive examinations. The university degrees are ordinarily conferred by the state and carry certain definite rights with them, but since 1896 a new type of degree, "doctorate of the university," not carrying state privileges, is granted upon easier terms to foreigners.

As in America, the universities include several faculties. Each of them has a faculty of letters and a faculty of science, and may have one of law, medicine, or Protestant theology. (The Catholic Church maintains its own schools of theology separately.) In Paris, besides the university, there is the College of France, which still emphasizes freedom of learning and thought (see p. 119) and confers no degrees. Likewise the government has established in Paris a dozen other institutions of higher education connected with some special field (*les Grandes Écoles*), such as the Polytechnic, the School of Mines, the School of Roads and Bridges, the School of Naval Engineering, and the Central School of Arts and Crafts. A number of similar higher institutions for agriculture, veterinary science, and other technical subjects have also been created in different parts of France.



**Teacher preparation.**—Preparation for elementary teaching is furnished through the primary normal schools (*écoles normales primaires*). As already seen (pp. 457 f.), France has long undertaken to provide one of these schools for men and another for women in each of the ninety "departments," but in two instances a smaller department has combined with another for this purpose. Though the state supports and controls these normal schools, the buildings have to be furnished and maintained by the departments. Each normal school is managed by a director, a business manager (*économiste*), and a faculty, but all of them are controlled by an administrative board, composed of an academy inspector (see p. 459) and six other members—four appointed by the rector of the academy and two by the general council of the department.

These institutions are all boarding schools, but may receive semi-boarding or even day pupils. Admission is obtained through a written and oral examination based on the work of the higher elementary schools and is competitive, the number of students to be admitted being determined by the probable vacant teaching positions to be filled. The course is three years in length,<sup>1</sup> and includes much liberal material, as well as professional studies. Practice work is carried on in a school connected with the normal school or in a local school assigned for the purpose. The teachers for these department normal schools are prepared in two higher normal schools (*écoles normales primaires supérieures*) maintained by the state at Fontenay-aux-Roses and Saint Cloud (see p. 458).

<sup>1</sup> By a decree of October 30, 1935, the period in the normal schools was to be reduced to two years, and the age for entering raised by increasing the time required for receiving the higher certificate of elementary education in the higher elementary schools, or for entering from a secondary school, but the decree has not yet been put into operation.

Preparation for teaching in the *collèges* and *lycées* may be obtained in the higher normal schools (*écoles normales supérieures*) — for men at Paris and for women at Sèvres — or in the various universities. Qualification for secondary teaching is based upon examinations and the possession of a certain degree or title. To be eligible to teach in a *collège*, one must have taken the *licence*, which requires two years of work beyond the baccalaureate of a *lycée* or *collège*. In 1920 a prescribed course adapted to teaching in secondary schools was arranged for literary subjects, and eight years later for the sciences. To teach in a *lycée* the requirements are higher. One must in this case undergo a strenuous competitive examination and obtain the title of *agrégé*, in addition to the *licence* and a “diploma of higher studies” in the field where application for the *agrégation* is made.

In order that those who have not been able to attend either a university or a higher normal school might not be altogether barred from teaching in secondary schools, a set of special “certificates of fitness” have been instituted of late years. These are obtained through competitive examinations, to be eligible for which one must possess a bachelor's degree or various equivalents connected with secondary or normal school graduation. This substitute for the *licence* or the *agrégation* has thus far been arranged only for teaching letters or science in secondary schools for women or modern languages in those for men, but may yet be considerably extended.

### EDUCATION IN ENGLAND

**Beginnings of national education.** — In England the nationalization of education was delayed even longer than in France. The English people have never been con-

trolled by enlightened despots, who could, as in Germany, force the growth of sentiment for public education, nor have they ever been overwhelmed by the sweep of a great revolution, destroying, as in France, all opposition to popular progress. National education in England has gradually grown out of the long series of conflicts and compromises among many different social elements — the church, the state, economic conditions, private enterprise, and philanthropy. For several centuries education was regarded as a function of the church and the family, and any movement toward universal training was retarded in its enactment into law by the attitude of the upper classes, who for the most part strove to keep the poor in ignorance and to maintain the educational control of the Established Church. Thus domination was first seriously challenged in the eighteenth century, and, while the training then furnished through the Society for the Promotion of Christian Knowledge, the Sunday schools, and other philanthropic institutions (see pp. 237 ff.) was rather meager, these organizations greatly advanced the cause of universal education.

Toward the close of this century there also began to appear a new point of view, especially among philosophers and reformers like Bentham, Blackstone, Robert Owen, and Adam Smith, who advocated universal and compulsory education, with the provision of some schools at public expense for those who could not afford fees. The theory of these great thinkers was somewhat in advance of the times, but early in the nineteenth century social changes and industrial improvement began to favor better educational opportunities and were reflected in the activities of Parliament. The Factory Act (1802) restricted child labor and provided for the obligatory train-

ing of apprentices. Mr. Whitbread introduced (1807) a bill to permit the civil officials of any township or parish to establish schools for the poor, wherever none existed. Henry Brougham, while losing his bill for popular education (1820), previously secured two commissions of inquiry on school facilities, and a large mass of evidence favorable to universal education was thus assembled. Finally, in 1832, the passage of a reform bill which greatly increased the suffrage aroused Parliament to the need of educating the masses, and the next year the first parliamentary grant, £20,000, was made for elementary education.

Thereafter governmental activity in education began gradually to increase. In 1839 the annual grant was raised to £30,000, and was allowed to be used for elementary education without restriction. In the same year a separate committee of the Privy Council was designated by Queen Victoria to administer the educational grants. Then in 1861, through another commission on popular education, it was arranged to base the grant to any school upon the record made by the pupils in the governmental examinations. This "payment by results" proved to be somewhat narrowing and unfair, but it did tend to increase the control of the government in education. And when the right of franchise was further extended in 1868, the necessity for preparing millions of the common people for new responsibilities in public affairs led to the passage of the epoch-making education bill of 1870.

Under this act "board schools," or institutions in charge of a board chosen by the people of the community, were to be established wherever a deficiency in the existing accommodations required it. The "voluntary" (i.e., denominational) schools, most of which belonged to the

Church of England, were to continue to share in the government grants upon equal terms with the new institutions, but the latter were to have the benefit of local "rates" in addition. Elementary instruction in all schools had to be open to government inspection, and the amount of the grant was partly determined by the report of the inspectors. The board schools were forbidden to allow denominational teaching, and religious instruction in either type of school had to be placed at the beginning or end of the school session, so that any pupil might conveniently withdraw if he wished.

The act of 1870 has become the basis of much school legislation since that time. The compromise in the bill that allowed the voluntary schools, with their sectarian instruction, to continue receiving government support, however, prevented a logical and consistent system from being established. The dual system of elementary schools continued to be recognized in a variety of enactments. Compulsory attendance laws were passed (1876 and 1880), the minimum age of exemption was first set at eleven years of age and then raised to twelve (1893 and 1899), and an extra grant, to take the place of tuition fees (1891), made it possible for most board schools to become absolutely free. Finally in 1899 there was created a national Board of Education, which assumed the functions of the Committee of Privy Council on Education and similar agencies for managing the interests of public education.

**Subsequent educational movements.** — Within a generation the board schools met with a phenomenal growth and came to include about seventy per cent of the pupils. They were spending about half as much again upon each pupil as were the voluntary schools, and were able to engage a much better staff of teachers. This extension of

civic influence in education was bitterly opposed by the Established Church, and when the conservatives came into power through the assistance of the clergy, they passed the law of 1902, whereby the denominational schools were permitted to share also in the local rates. Under this act the administration of both board and voluntary schools was centralized in the county, borough, or city councils. But the immediate control of instruction in the voluntary schools was placed in the hands of a board of managers, and, despite their receipt of local taxes, these schools were required to have but two of their six managers appointed by the council.

Serious opposition to the enforcement of the new law arose among non-conformists and others, and coercive measures had to be taken by the government. The new act, however, while unfair to those outside the Church of England, tended to sweep away the dual system of public and church schools, since both types were coming to rest upon a basis of public control and support. Since 1902 all elementary schools have been considered as part of one comprehensive system, and the board schools have been distinguished as "provided schools" and the voluntary as "non-provided."

Moreover, under the legislation of 1902, steps were also taken to co-ordinate secondary with elementary education, and bring it somewhat within the public system. Until then little interest in secondary education had been permitted on the part of the state. While early in their existence the board schools had begun to develop upward into secondary education and before long had come to compete with the older grammar and public schools, in 1900 the "Cockerton judgment" forbade the use of local "rates" for instruction other than elementary. It re-

mained, therefore, for the act of 1902 to enable the councils to maintain instruction in work beyond the elementary field. In keeping with the authorization thereby granted, in the early part of the first decade of the century all large cities generally began to establish "central schools," which should offer advanced training as a supplement to a number of elementary schools in the neighborhood.

After the liberals had returned to power, they continued the conservatives' policies of granting local "rates" to all elementary schools and of bringing secondary education under public support and control. While the education bill of 1906, which was kept from passage by the House of Lords, did not recognize church schools as such and insisted upon placing them under the public authorities, it made no attempt to return to the former isolation of secondary from elementary education. Then came the act of 1918, which provided a comprehensive school system for all districts, although some authorities continued to have more powers than others. While the urban and municipal boroughs were limited to providing nursery and elementary schools, they were permitted to co-operate with counties and county boroughs in providing secondary and adult education. Finally, by the act of 1921 it was made the definite duty of all local authorities to provide or aid in the provision of secondary education.

Further progress toward unification in a national system has since been made without actual legislation. In 1926 the "Hadow Report" recommended that all public education should be on a common basis until the age of eleven, and that then the pupil should be given an opportunity for secondary education in keeping with his abilities and needs. Such articulation is in harmony with that contemplated by the *Einheitsschule* (see p. 440) and the *école unique*

(p. 462), and an ever increasing number of authorities have organized their schools on this basis. In 1932 private schools were also brought into line by the report of an official committee, which recommended that they should be registered with the local authorities and open to their inspection. Thus, while England has not yet adopted an entirely secular system, it is clearly upon the high road to the development of an articulated plan of national education.

**Central and local administration.** — Evidently this national organization of education in England is of comparatively recent origin, and is from its very history far different from the bureaucratic type existing in Germany and even more in France. It is axiomatic for English thinkers to hold that only through freedom of action can initiative and growth be ensured and that richness in content and character can best be obtained for education by non-interference with adaptation to local interests and needs upon the part of the national administration. Consequently, the central authority has no compulsory powers over the local, unless the latter fails to fulfill its duties under the Education Act (1921). It has never prescribed courses, methods, or textbooks, although it has considerable power over external matters, such as building standards, length of term and daily sessions, qualifications of teachers, and medical inspection. It may, however, endeavor to influence general practice through discussion or by withholding educational grants, and it may conduct inquiries into local conditions and require reports from local authorities.

Theoretically the central authority is the Board of Education, but as this body, composed of various members of the Cabinet and Privy Council, has never met, the power



is practically in the hands of the president of the board, who really serves as a minister of education. The office is a political one and has not often been held by a trained educator. The incumbent is assisted in forming policies and presenting the budget by a Secretary of Education, and the details of administration are carried on by a permanent staff. Thus continuity of policy is effected without crystallization.

The local educational authority has, as already seen, since 1902 been vested in a county, borough, or city council. Under the act of 1918 each council is fully responsible for the organization and development of schools within its district and must submit its plans to the Board of Education for approval. As, however, a council also has charge of a variety of civic matters, it has to delegate most of its educational powers to a standing committee. This committee on education naturally contains few educators, and for this reason is under the law required to elect certain "co-opted members" to assist it. These latter members are generally persons of experience in education, such as teachers, principals, and professors. The professional and clerical work of the committee could at first be conducted by a secretary or two, but its work has now come to include so many functions that quite a large administrative staff has grown up in most districts. At the head of such an organization is usually a chief officer known as the Secretary or Director of Education who, besides being an able educator, has to be skilled in all matters relating to finance, buildings, and equipment.

**Elementary schools.** — The system of public elementary education in England is dual (Fig. 78). It combines under the control of a local council the "provided" schools,

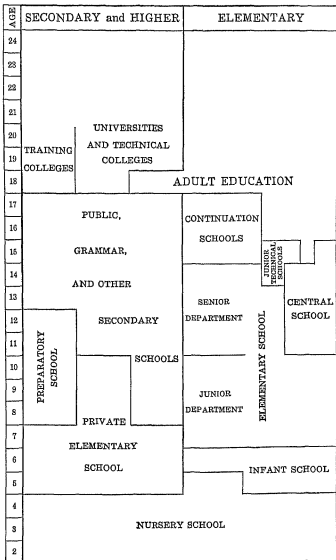


FIG 78 Diagram of English education

where the buildings are owned by the education authorities, and the "non-provided" schools, where the buildings are the property of a denominational board of managers and are rented for public use. Quite a number of elementary schools under private auspices have also been established, and serve to prepare for the secondary schools. In all public elementary schools religious instruction is given, but in the provided schools it has to be undenominational in character and consists mainly in reading the Bible without comment. The non-provided schools have been permitted to continue their sectarian teaching and to select their own teachers.

The age of compulsory attendance upon elementary education runs from five to fifteen,<sup>1</sup> but entrance may be delayed until six. This period is divided between the "infant school" for children from five (or six) to seven years of age, and the "elementary school" for those between seven and fifteen. The infant school arose as a separate institution in the nineteenth century and generally has its own principal and teaching staff. For many years working mothers found it convenient to deposit their children below the age of compulsory attendance in infant schools, where they could be cared for during the day, and, while this practice was discouraged, it increased enormously during the World War and the need was eventually recognized by the formation of "nursery schools." Such schools afford children between two and five years of age the physical and medical attention needed during this early period, and it soon became permissible to establish them at public expense. They are, however, relatively few in number, and are mostly maintained by voluntary organizations with some aid.

<sup>1</sup> The age was raised from fourteen to fifteen in July, 1936

The public elementary schools themselves are often divided with reference to sex and to age. While there is no uniformity in organization, the boys and girls are usually taught separately, and "junior departments" for children from seven to eleven years, and "senior departments" for those from eleven to fifteen are recognized. When they have completed the junior department of the public school, children may be examined for admission to a "central school" or to secondary work, and some private elementary schools prepare pupils for secondary education at eleven. In fact, it is not unlikely that all pupils will in the near future be allowed at that age to enter some sort of secondary work adapted to their particular ability and needs, and that transfers between the various types of schools will be readily made. Thus a much closer articulation can be effected for the various stages of a system that has grown up spontaneously.

Part-time or continuation schools for young people between fourteen and eighteen were made compulsory by the act of 1918. While this legislation has not yet been generally enforced, a wide range of part-time education, both general and vocational, has been established on a voluntary basis. A greater variety of courses for adults has also been established in England than in any other country. This work is not only promoted by local authorities and voluntary organizations of workers and philanthropists, but even by the universities and various associations formed within these institutions.

**Secondary education.** — The conventional type of secondary education in England was until recently found in the so-called "public" and "grammar" schools (Fig 78). Little distinction can be made between these two types, as they both go back several centuries for their origin

and have much the same organization and course of study (see p 127). Generally speaking, the grammar school is located in a city and so is a day school, whereas the public school has grown up in a smaller place and has dormitories, but this is not always the case. As a matter of fact, while the line of demarcation is sometimes hard to draw, a public school may be said to have a wider repute and a more aristocratic patronage than a grammar school. Even this difference has largely been obliterated, as the term "public school" is now applied to all institutions demonstrating eligibility to the Headmasters' Conference, which is determined according to definite qualifications as to the size of a school's enrollment and the record of its graduates. Besides the "nine great public schools" recognized by the former Clarendon Commission (see p 127), at present nearly two hundred others are included on the list.

The public schools in general admit boys at about thirteen years of age, and graduate them after five or six years, and usually receive them from "preparatory schools," which they enter some five years earlier. Pupils may, however, enter certain of these secondary schools directly at eight, or after graduation from a private elementary school at eleven. In the course of study, emphasis has generally been laid on Latin and Greek, but the complete monopoly of the classics is now somewhat broken. During the Victorian era all the older schools developed "modern sides," and a number of new schools were founded, which gave considerable attention to modern languages, mathematics, science, English, and history from the start. The independence of the grammar and public schools from the regulations of the Board of Education also enables them to experiment with innovations and various progressive movements. Similar schools

have been opened for girls and have now become fairly common.

The public and grammar schools charge a substantial fee for tuition, but all of them have a certain number of scholarships. Moreover, besides providing vocational training in the "central" and technical schools, the councils have established and maintained a large number of secondary schools both for boys and for girls. These schools now educate the large majority of pupils at this level. Their tuition charge is very moderate, and, in return for grants from the Board of Education, twenty-five to fifty per cent of the pupils receive "special places," which carry total or partial exemption from school fees. The special places are awarded annually on the basis of competitive examinations, which vary somewhat in nature and scope from one district to another.<sup>1</sup> Likewise local authorities have for some time offered competitive scholarships for specially gifted graduates of the elementary schools, and since 1918 they have been permitted to make grants for maintaining pupils in secondary schools. Hence, while as yet only a minority of the boys and girls in England have the possibility of securing a secondary education, this opportunity is fast becoming universal. By 1936 nearly half a million pupils were being accommodated.

**Higher education.** — The traditional conception of the higher education necessary for making an "English gentleman" has long been embodied in the universities of Oxford and Cambridge. These institutions go back to the Middle Ages for their origin and early absorbed the humanistic and ecclesiastical atmosphere of the Renais-

<sup>1</sup> See Percy, Lord Eustace (editor). *The Year Book of Education for 1936* Evans Brothers, London, pp. 975 ff

sance and Reformation (see pp. 124 and 158). During the nineteenth century, however, the classical and ecclesiastical monopoly of higher education was largely broken. A recognition of the scientific ideals and content began to appear in the curriculum at both Cambridge (1851) and Oxford (1853), and the theological requirements for a degree came to be dropped (1856). By the last quarter of the century actual laboratories and workshops had been introduced, and students were freed from all doctrinal tests at both universities.

Moreover, new universities, better adjusted to modern demands and more closely related to the school systems and the civil government, began to arise in manufacturing and commercial centers. During the last decade of the century such local or "provincial" institutions as the Universities of Birmingham, Manchester, Liverpool, Leeds, Bristol, Sheffield, and Reading sprang up, and the University of London, started as an examining body in 1836, became an actual teaching institution in 1900. Likewise a number of independent "university colleges," such as those at Southampton, Exeter, Nottingham, Hull, and Leicester were established. The Imperial College of Science and Technology (see p 507) and a number of other technical colleges have also been founded.

No higher education is as yet entirely supported and controlled by the state in England. All the universities and colleges mentioned above are on private foundation, and are maintained by endowments, fees, and governmental grants. Scholarships to be used at the universities have, however, long been offered through endowments at various secondary schools. Likewise county and borough councils have been enabled by the act of 1902 to offer numerous scholarships, and under the act of 1918

two hundred "state" scholarships open to both sexes have been awarded through an annual examination.

**Teacher preparation.** — For more than half a century the training of elementary teachers came largely through apprenticeship and was based upon a totally inadequate fundamental education. At thirteen years of age the "pupil teacher" was indentured to the headmaster of an elementary school for a period of five years. What little advanced studying he did, had to take place after school hours under the direction of the master, as the pupil teacher was occupied during the day in assisting him and learning to teach by imitation. At the end of the apprenticeship he took the competitive examination to become one of the "Queen's scholars." If he did not succeed, he continued in one of the lower teaching positions throughout his career, but if he were awarded a scholarship, he was able to undertake professional study for two years at one of the "training colleges," which had been established under various denominational or other voluntary organizations (see p. 240).

Upon the extension of elementary education in 1870, it came to be recognized that a broader foundation for teacher training was badly needed. Accordingly, the age for becoming a pupil teacher was raised to sixteen, and "pupil teacher centers" were eventually started where some secondary education might be obtained by the apprentice. After finishing his work at such a center, he obtained a year of practical experience and then entered a training college if successful in the competitive examination for scholarships. These pupil teacher centers probably furnished the best opportunities possible before public secondary schools were started. Under the act of 1902, however, the local authorities were permitted to maintain



the latter institutions from the "rates," and as these have increased in number young people expecting to prepare for elementary teaching have resorted to them more and more and a complete secondary course is now generally required for admission to a training college.

Through the legislation of 1902 also the councils were given the right to establish their own training colleges. In 1906 grants for this purpose were authorized from the government, and since 1928 these professional schools have been entirely supported, though not controlled, by the state. There are now some seventy-five such institutions with a course of two years (sometimes three years for teaching special subjects) under various auspices — denominational, undenominational, local, and university — and upon both a day and a boarding basis. Likewise by 1890 the universities had introduced "training departments" for the preparation of teachers, and there are now twenty-two of these departments. Since 1911 they have extended their courses to four years, three of which are devoted to academic and one to professional work including practice teaching, but even the academic subjects are presented from the standpoint of teaching them.

For work in the secondary schools until recently few teachers had received professional preparation. Even now the Board of Education does not require it in any more definite way than to state that, in order to be recognized, secondary schools must have "an adequate and qualified staff." The usual training for secondary teachers now comes through a year's graduate work at some university, which generally includes such subjects as the history and principles of education, educational psychology, educational hygiene, and supervised practice work in a local secondary school. University graduates who have not

had such a course may, under the regulations of the Board of Education, be appointed for one year as probationary teachers at a small salary and meanwhile study for the "teacher's diploma," which is awarded upon an examination conducted by the universities. Some of the universities even permit candidates for this license to do full-time teaching while working privately for the examination in theory and practice. But whatever the provision for professional education, the great mass of the teachers in secondary schools—some seventy-five or eighty per cent—are now at least university graduates.

#### EDUCATION IN CANADA

The systems of schools which have grown up in the various provinces of Canada approach those of the United States more closely than do any in the European countries. Yet they are sufficiently distinctive and important to deserve description and to prove suggestive to Americans. Canada developed schools in the very early days of her history. At first education was cared for separately in the four provinces then existing, and when they united to form the Dominion of Canada (1867), the federated government left to each province the administration of public education within its borders. The same autonomy has been extended to the provinces that have since been admitted to the federation. Two types of educational control, state and ecclesiastical, have been developing from the first. The former method is best illustrated by the system of schools with grants of public funds that has been organized in Ontario, and the latter by the public supervision of parochial schools that has grown up in Quebec. Ontario was settled mostly by English and Scotch emigrants, many of whom had as "union loyalists"

come from the United States after the Declaration of Independence, and practically all had brought with them the concept of public control of education. The French Catholics of Quebec, on the other hand, naturally followed their tradition of parish schools.

**Development of the Ontario school system.** — The system of schools in Ontario began before the middle of the nineteenth century. As early as 1841 the provincial parliament provided for the establishment of township "common schools" and for district "grammar schools," after the English type of education. Then in 1846, through Egerton Ryerson, superintendent of education for the province, the Common Schools Act was passed. This was formulated after a careful study of the systems of Massachusetts, New York, and European countries, and included excellent elements from various systems and many original features of value. By his tenure of office throughout a generation, Ryerson was able to develop and complete this system, and the Ontario law of 1871 included free tuition, compulsory attendance, county inspection, uniform examinations, and many of the other features for which he had contended. Since 1876 an even greater centralization of the provincial system has been effected by substituting for the superintendent a "minister of education" with larger powers, and bringing all stages of public education — elementary, secondary, and higher schools — into much closer relationship.

**The central and local administration.** — The minister now has many assistants, including since 1906 an Advisory Council of Education, composed of representatives from the universities and public schools, the inspectional corps, and local trustees. He initiates and directs all school

legislation, decides complaints and disputes, sets examinations for the high, elementary, model, and normal schools, prescribes the courses of study, chooses the textbooks, and appoints the inspectors. His is an office of great power and dignity. The system is further administered by subordinate authorities elected in the localities, whose duties are clearly defined by law.

The province is for educational purposes divided into counties, which are in turn divided into townships, and subdivided into sections and incorporated cities, towns, and villages. The central and local administrations are wisely balanced, and, while the one determines scholastic standards through its professional requirements, the other establishes schools, appoints teachers, and regulates expenditures under the general control of the minister.

**Educational levels and functions.**—The system of elementary schools, high schools, and universities is fully unified. Although the secondary schools are administered by a different board from the elementary, the work of each stage fits into the others even more exactly than in the "ladder" system of the United States. As yet the "intermediate school," similar to the American junior high school and the English central school, has made but little progress in Ontario, but a reorganization on this basis may eventually be effected. The training of teachers is cared for through the departments of education in the five universities, the eight provincial normal schools, and the model school in each county. The teachers for secondary institutions are prepared at the universities, the normal schools grant a life certificate to teach in the elementary schools, and the model schools afford fourteen weeks of training for rural teachers. The buildings, equipment, courses, and instruction of the high, elementary, and model

schools are each reported upon by inspectors of assured scholarship and experience

**Maintenance of "separate" schools.** — Since 1863 permission has been granted to establish "separate schools" for any particular creed or race, wherever there are five families requesting it. This opportunity to have schools of their own faith has not been embraced by any save the Roman Catholics. Anyone paying toward the support of a "separate school" is exempt from taxation for the regular public schools. Special provincial inspectors report upon these institutions in the same way as for the public schools. An effort has occasionally been made to negate this provision by instituting purely secular schools throughout the province. This has been done by some other provinces from the first or after a time, as in the case of Manitoba in 1890, but it has never succeeded in Ontario, and even in the public schools non-sectarian religious exercises are still conducted

**The system of ecclesiastical schools in Quebec.** — The Ontario system may be considered typical of the educational administration in the various provinces of Canada, except Quebec. While each province has a history and peculiarities of its own, many of the features in all of them have been taken from the Ontario model. Every province has sought uniformity of school provisions and educational standards through government control, although none of the others grant their central officials quite as much power as Ontario. In Nova Scotia, Manitoba, and British Columbia the Executive Council constitutes the educational authority of the province, and the chief officer, known as "superintendent," is appointed by the lieutenant governor. New Brunswick vests the authority in a Board of Education, composed of the lieutenant governor, the

members of the executive council, the president of the university, and the superintendent, who acts as executive secretary.

But the ecclesiastical type of control in Quebec is very different from that of the other provinces. The educational system originated there in the schools of the parishes and of the teaching orders, and in 1845 the parish was by law made the unit of school administration. Seven years later government inspectors were established, and in 1859 a central organization was completed with a Council of Public Instruction. This authority is composed of two divisions, a Catholic and a Protestant, which sit separately and administer the schools of their respective creeds.

**Two divisions under a single authority.** — The provincial superintendent of schools, appointed by the lieutenant governor, is *ex-officio* chairman of both divisions, but he can vote only with the division to which he belongs by religion. Each division makes regulations for the instruction and tests of its own schools, and appoints inspectors belonging to its own faith. The proceeds from the general public school fund, a special tax, or any educational legacies are divided in proportion to the Catholic and Protestant inhabitants, but the regular school rate of one-fifth cent on a dollar may be assigned to whichever of the two divisions the taxpayer wishes. The local unit in education is the municipality, which may be divided into districts, and the trustees in each district have full control of the schools there, subject to the requirements of the Council of Public Instruction.

#### COMPARISON OF MODERN SCHOOL SYSTEMS

Thus, during the eighteenth and nineteenth centuries, systems of education have been centralized in the civil

governments of the leading European nations and of Canada. With the exception of the Canadian provinces, however, no one of these states has yet altogether welded its primary and secondary systems. Moreover, while France alone has been completely centralized and rendered purely secular, all the others have been liberated from ecclesiastical control and are under civic organization and management. This development represents a very different situation from the conditions in the administration of schools that furnished America with its first educational traditions, but the evolution of state control in the United States took place quite independently of that in Europe.

In fact, until the early part of the nineteenth century, so little was known in America concerning European education that adaptations to the systems of the various states were practically impossible. Since then, however, any improvements in method, content, and administration that have taken place in German, French, or English schools have come to be speedily heralded by American education, and have often proved suggestive. Much, too, may be learned in the United States from the thorough and systematic, though somewhat less elastic, educational organizations of Canada, especially in Ontario, and in all cases a comparison of the modern system of education in one great nation with that of another should prove broadening and mutually beneficial.

#### SUMMARY OF THE CHAPTER

The leading states of western Europe and of Canada have, during the past two centuries, organized systems of education which may prove suggestive to the United States.

In Prussia, owing to a strong line of monarchs, state control, with an elaborate hierarchy of administration, took the place of the ecclesiastical schools through a series of decrees and enactments. The

"people's schools" were long completely separate from the secondary schools, but since the republic two new types of secondary institutions have been created for pupils who started with the elementary school. Besides the people's schools, intermediate and continuation schools are included in elementary education. Three historic types of secondary institutions for boys have developed — the "gymnasium," with the classics as staples, the "real-school," with modern languages and sciences; and the "realgymnasium," with its compromise between the other two. More recently these have been paralleled by the "institution of learning" and "lyceum" for girls. The later secondary schools are the "German higher school," emphasizing native culture, and the *Aufbauschule* originally intended for the rural districts. Both these types exist for girls, as well as boys. In higher education, the universities have likewise been emancipated from ecclesiastical control, and higher technological and commercial institutions have also been founded on an independent basis. Preparation for elementary teaching has now outgrown the normal school and requires graduation from a secondary school and a "teachers college"; while secondary teachers must be trained at the universities and take two graduate years of professional training.

In France, a highly centralized system has been developed. Napoleon united secondary and higher education in a single organization, under Louis Philippe an organization of elementary schools was created; and during the third republic elementary education has been made free, compulsory, and secular. The elementary system now embraces "maternal schools" (age, two to six years), primary schools, (six to fourteen), and higher primary schools (fourteen to sixteen), while the secondary training is furnished by the *lycées* and the communal *collèges*, which have been differentiated into several courses leading to the baccalaureate. One-half of the universities established by Napoleon were suppressed during the Restoration, but since 1896 a university has come to be established in each of the "academies," and other higher institutions have been founded independently. Preparation for elementary teaching is obtained in the "primary normal schools," and teachers for these institutions are furnished through two "higher primary normal schools." Training for *collège* and *lycée* teachers is also given in two "higher normal schools" and in the seventeen universities.

In England national education has grown out of the conflict of a



number of social elements. The sentiment for universal education began to appear toward the close of the eighteenth century, but not until 1870 were "board schools" established. In 1899 a central Board of Education was created, and the act of 1902, while permitting non-provided schools to share in the local rates, unified the system and started secondary education at public expense, and the acts of 1918 and 1921 provided a comprehensive school system and required the local authorities to provide for secondary education. Since then further articulation and bringing the private school into line have been accomplished by voluntary means. The elementary system now includes "nursery schools" (ages, two to five), "infant schools" (five to seven), and "junior" (seven to eleven) and "senior" (eleven to fifteen) departments of elementary schools. Besides the endowed "public" and "grammar" schools, a variety of other secondary schools have been established by local authorities, and considerable provision has been made for scholarships and "special places" by endowment and by the councils and the Board of Education. In higher education the classical monopoly has been somewhat broken and a number of provincial universities and university colleges have been founded. Elementary teachers are now prepared in secondary schools and "training colleges," and secondary teachers through the universities and graduate professional training.

In Canada there have developed two types of educational control, (1) the closely centralized system of public schools best illustrated by Ontario, and (2) the public supervision of ecclesiastical schools in Quebec.

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## CHAPTER XIX

### THE SCIENTIFIC MOVEMENT

#### MODERN DEVELOPMENT OF SCIENCE AND INVENTION

**Important scientific discoveries.**— We have already (pp. 171 f. and 179 ff) witnessed the early growth of the natural sciences and the beginning of their introduction into the curriculum toward the close of the seventeenth century. This tendency was greatly stimulated by Rousseau, who, as we have seen (pp. 222 f), may be held to have promoted the scientific as well as the sociological and psychological movements. During the past two centuries this development became more rapid and extensive. The desire for scientific investigation steadily grew until its ideals, methods, and results became patent in every department of human knowledge. The strongholds of ignorance, superstition, and prejudice were rapidly stormed and taken through new discoveries or a new marshaling of facts already discovered.

But evident as this movement has been, it is scarcely possible here even to mention the more important scientific achievements, or to outline the broad sweep of progress in astronomy, geology, biology, physiology, chemistry, physics, and other sciences within a century. The Newtonian theory has been confirmed by the investigations of Lagrange and Laplace and by the discovery of Neptune through mathematical reasoning from the effects of its gravitation. Hutton's "Plutonic" theory of continents and Agassiz's hypothesis of a universal ice-

age have been formulated. The doctrine of evolution of Charles Darwin (1809–1882, see Fig. 79) and Mendel's law of inheritance have been established. Liebig and others have thrown light upon the process of digestion and the functioning of the lungs and liver. Atoms, molecules, and



FIG. 79 Charles Darwin

ions have been defined. Joule and Mayer have demonstrated the conservation of energy, and the periodic law of chemical elements has been discovered by Newlands.

#### Application of the sciences.

—It should be noted, however, that the majority of these investigations were for a long time carried on outside the universities. Owing to the almost proverbial conservatism of education, natural sciences scarcely entered the course of study anywhere. In fact, these great discoveries seem at first

not to have affected practical life in any direction. Huxley tells us that in the eighteenth century "weaving and spinning were carried on with the old appliances, nobody could travel faster by sea or by land than at any previous time in the world's history, and King George could send a message from London to York no faster than King John might have done." But a little later, as he adds, "that growth of knowledge beyond imaginable utilitarian ends, which is the condition precedent of its practical utility, began to produce some effect upon practical life."

The nineteenth century will, on this account, always be known for its development of inventions and the arts, as well as of pure science. During this period natural science rapidly expanded and took the form of applications to the problems of labor, production, transportation, communication, hygiene, and sanitation. The reaper, the sewing machine, the printing press, and the typewriter greatly reduced the cost of labor, the steamboat, locomotive, electric railway, telegraph, and telephone linked all parts of the world together; anthracite, friction matches, petroleum, and electric lighting and heating greatly enlarged the comforts of life, and advances in hygiene and medical sciences added wonderfully to the span of human life.

#### ARGUMENTS FOR THE STUDY OF THE SCIENCES

Spencer's *What Knowledge Is of Most Worth?*—Because of these practical results, the vital importance of a knowledge of natural phenomena to human welfare and social progress was more and more felt throughout the century. It gradually became evident that a knowledge of the natural sciences was demanded by modern life and that these subjects constituted elements of the greatest value in modern culture and education. Many English and American writers began to maintain that an exclusive study of the classics did not provide a suitable preparation for life, and that the sciences should be included in the curriculum. This step was bitterly opposed by conservative institutions and educators. During the greater part of the century a contest was waged between the advocates of classical monopoly and the progressives, who urged that the sciences should be introduced. A representative argument for sciences in the course of

study is that made by Herbert Spencer (1820-1903) in his essay on *What Knowledge Is of Most Worth*. Spencer (Fig. 80) ventured to raise the whole question of the purpose of education. He declares:

To prepare us for complete living is the function which education has to discharge, and the only rational mode of judging of any edu-



FIG 80. Herbert Spencer

cational course is to judge in what degree it discharges such function. Our first step must obviously be to classify, in the order of their importance, the leading kinds of activity which constitute human life. They may be arranged into: 1 Those activities which directly minister to self-preservation; 2 Those activities which, by securing the necessities of life, indirectly minister to self-preservation, 3 Those activities which have for their end the rearing and discipline of offspring, 4 Those activities which are involved in the maintenance of proper social and political relations; 5 Those miscellaneous activities which make up the leisure part of life, devoted to the gratification of the tastes and feelings. The ideal of

education is complete preparation in all these divisions. But failing this ideal, the aim should be to maintain a due proportion between the degrees of preparation in each, greatest where the value is greatest, less where the value is less, least where the value is least.

Applying this test, Spencer finds that a knowledge of the sciences is always most useful in life, and therefore of most worth. He considers each one of the five groups of activities, and demonstrates the need of the knowledge of some science or sciences to guide it rightly. An acquaintance with physiology is necessary to the main-



tenance of health, and so to self-preservation. Any form of industry or other means of indirect self-preservation will require some understanding of mathematics, physics, chemistry, biology, and sociology. To care for the physical, intellectual, and moral training of their children, parents should know the general principles of physiology, psychology, and ethics. A man is best fitted for citizenship through a knowledge of the science of history in its political, economic, and social aspects. And even the esthetic or leisure side of life depends upon physiology, mechanics, and psychology as a basis for art, music, and poetry.

Hence Spencer advocates a complete change from the type of training that had dominated education since the Renaissance and calls for a release from the traditional bondage to the classics. Instead of Greek and Latin for "culture" and "discipline," and an order of society where the few are educated for a life of elegant leisure, he recommends the sciences and a new scheme of life where everyone shall enjoy all advantages in the order of their relative value. But Spencer uses the term "science" rather loosely, and seeks to denote the social, political, and moral sciences, as well as the physical and biological, as being "of most worth." Hence he does not deserve to be so severely arraigned for his "utilitarianism" as he frequently has been. His "preparation for complete living" includes more than "how to live in the material sense only," and with him education should contain such material as will elevate conduct and make life pleasanter, nobler, and more effective.

**Advocacy of the sciences by Huxley and others.** — Another great popularizer of the scientific elements in education, who also stressed the value of the sciences for

"complete living" and social progress, was Thomas H. Huxley (1825-1895). Huxley's (Fig. 81) use of English was vigorous and epigrammatic, and he showed great skill in bringing his conclusions into such simple language that the most unscientific persons could understand them.



FIG 81 Thomas H Huxley  
Reproduced from Collier's portrait in the  
National Portrait Gallery, London

Especially in an address on *A Liberal Education* before a "workingmen's college" has he most forcefully depicted the value of the sciences and other modern subjects in training for concrete living, and ridiculed the ineffectiveness of the current classical education. Huxley here maintains:

The life, the fortune, and the happiness of every one of us depend upon our knowing something of the phenomena of the universe and the laws of Nature. And yet this is what people tell to their sons:

"At the cost of from one to two thousand pounds of our hard-earned money, we devote twelve of the most precious years of your life to school. There you shall not learn one single thing of all those you will most want to know directly you leave school and enter upon the practical business of life. The middle-class school substitutes what is usually comprised under the compendious title of the "classics"—that is to say, the languages, the literature, and the history of the ancient Greeks and Romans, and the geography of so much of the world as was known to these two great nations of antiquity. The British father denies his children all the knowledge they might turn to account in life, not merely for the achievement of vulgar success, but for guidance in the great crises of human existence."

Many other vigorous lecturers and writers entered into this reform of the curriculum. Opposition to the over-emphasis of languages, especially the classics, in the content of education was undertaken even earlier in the century by the distinguished phrenologist, George Combe (1788-1858). In his "secular" schools and in his work on *Education*, Combe emphasized instruction in the sciences relating to moral, religious, social, and political life, as well as those bearing upon man's physical and mental constitution. After the middle of the century a number of men undertook to popularize the sciences in America by tongue and pen. One of the most effective of these was Edward L. Youmans (1821-1887), who collected and edited a set of lectures urging the claims of the various sciences under the title of *Culture Demanded by Modern Life*. A service for the sciences, bearing more directly upon the educational world, was that performed by Charles W. Eliot (1834-1926), president of Harvard University. Eliot (Fig. 82) accomplished this largely by an extension of the elective system and an emphasis upon science in the curriculums of schools and colleges. In his description of "a liberal education" he argues:



FIG. 82 Charles W. Eliot

The arts built upon chemistry, physics, botany, zoology, and geology are chief factors in the civilization of our time, and are growing in material and moral influence at a marvelous rate. They are not

simply mechanical or material forces, they are also moral forces of great intensity

**Disciplinary argument for the sciences.** — Thus, in general, the writers and lecturers interested in the scientific movement held that a knowledge of nature was indispensable for human welfare and that the content of studies rather than the method was of importance in education. Many of them also expressed their dissent from the disciplinary conception of education urged by the classicists. Huxley, for example, parodies the usual linguistic drill by stating :

I could get up an osteological primer so arid, so pedantic in its terminology, so altogether distasteful to the youthful mind, as to beat the recent famous production of the head-master out of the field in all these excellences. Next, I could exercise my boys upon easy fossils, and bring out all their powers of memory and all their ingenuity in the application of my osteogrammatical rules to the interpretation, or construing, of those fragments

Yet the tradition of "formal discipline" and the belief in "faculties" or general powers of the mind that might be trained by certain favored studies and afterward applied in any direction (see p. 185) were too firmly rooted to be entirely upset. Even the greatest of the scientists seem to have been influenced by this notion and to have attempted occasionally a defense of their subjects on the basis of superiority in this direction. After Spencer has made his effective argument for the sciences on the ground that their "content" is so much more valuable for the activities of life, he shifts his whole point of view, and attempts to anticipate the classicists by occupying their own ground. He insists that "besides its use for guidance in conduct, the acquisition of each order of facts has also its use as mental exercise." As evidence

of this, he undertakes to show that science, like language, trains the memory, and, in addition, exercises the understanding, and that it is superior to language in cultivating judgment. }

A similar argument is made by Combe, when he maintains that "it is not so much the mere knowledge of the details of Chemistry, of Natural Philosophy, or of any other science that I value, as the strengthening of the intellect, which follows from these studies." So Youmans declares that "by far the most priceless of all things is mental power. Science made the basis of culture will accomplish this result." In fact, nearly every apologist for the natural sciences at some time or other has advocated these subjects from the standpoint of formal discipline, although his implied attitude toward the transfer of a generalized ideal is often in harmony with modern psychology (see p. 186)

#### ADDITION OF SCIENCES TO THE CURRICULUM

**Higher and secondary education in Germany.** — Contemporaneously with the growth of inventions and the vigorous campaigns of advanced thinkers during the nineteenth century, training in science was slowly creeping into educational practice. While the sciences began to work their way into institutions of all grades early in the eighteenth century, it was not until about the middle of the nineteenth that the movement was seriously felt in education. Even in Germany the first attempts at studying nature were made outside the universities in the "academies of science." We have seen (p. 180) that during the eighteenth century most of the Protestant universities had started professorships in the sciences. But it was not until the beginning of the second quarter

of the nineteenth century that, in Liebig's laboratory at the University of Giessen, instruction by means of experiments was begun, and it was after the middle of the century before this investigation work had generally replaced the formal science instruction in German universities. Since then the development of science in the higher education of Germany has been phenomenal. The *Technische Hochschulen* (see p. 453) have also come to furnish instruction in all fields of applied science.

In German secondary instruction, the realistic instruction of the Pietists was brought by Hecker (see p. 447) to Berlin, where he started his famous *Realschule* in 1747, and before the beginning of the nineteenth century similar institutions had spread throughout Prussia. Early in the nineteenth century the course of study in the gymnasiums of Prussia was considerably modified, and, as part of the compromise, some science was introduced. The movement later spread into the secondary education of states in South Germany, and, while the total amount of science was not large, it managed to hold its place in the gymnasial curriculum even during the reaction to absolutism between 1815 and 1848. But, as we have seen (p. 448), two types of real-schools were eventually recognized, *Realgymnasium* and *Ober-realschule*, and they at present devote approximately twice as much time to the physical and biological sciences as do the gymnasiums. During the latter half of the century technical and trade schools, with scientific and mathematical subjects as a foundation for the vocational work, appeared in large numbers as a species of secondary education in Germany, and since the twentieth century began they have greatly increased in variety and importance.

The scientific movement was also felt in the elementary schools of Germany during the early part of the nineteenth century. Science was considerably popularized by the schools of the philanthropists (pp 227 f.), and was widely introduced into elementary education by the spread of Pestalozzianism in Prussia and other German states (p. 304). Before the close of the first quarter of the century the study of elementary science — natural history, physiology, and physics — appeared in various grades, geography and drawing were taught throughout the course, and geometry was included in the upper classes of the *Volksschulen*.

**Universities, lycées, and primary schools in France.** — Before the revolution in France the higher and secondary institutions found little place for instruction in science. There was a chair of experimental physics at the College of Navarre of the University of Paris and at the Universities of Toulouse and Montpellier, and natural history was also taught at the more independent College of France, but as a whole education was dominated largely by humanism. However, with the establishment of the republic a new régime began in education, as in other matters, and science entered more largely into higher and secondary instruction. Most of the revolutionary proposals concerning education subordinated letters to science, and in 1794 the republic founded a great central normal school, where the famous Laplace and Lagrange for a short time gave instruction in science. In 1802 Napoleon had included in the scientific course for the *lycées* natural history, physics, astronomy, chemistry, and mineralogy, and a definite advance in quantity and method of the scientific instruction in secondary schools was made in 1814. On the ground that they were

injuring classical studies, Cousin in 1840 had the sciences curtailed, but he was shortly forced to restore them upon an optional basis. A contest between the two types of studies was carried on in the *lycées* until 1852, when a bifurcation in the course theoretically put the two upon the same basis.

Some instruction in science has come to be given during the past sixty or seventy years even in the elementary schools of France. In the lower primary schools the work is informal, and consists mostly of object lessons and first scientific notions. These are developed in connection with drawing, manual training, agriculture, and geography of the neighborhood and of France in general. Instruction becomes more formal in the "higher primary" schools, and includes regular courses in the natural and physical sciences and in hygiene, as well as in geography, drawing, and manual training. In the normal schools for primary teachers instruction in all the physical and biological sciences is even more thorough, and not only includes the facts and theories of general scientific importance, but also emphasizes their applications to everyday life. For example, the flora and fauna of the neighborhood are studied in their special relation to agriculture.

**Higher, secondary, and elementary education in England.**—In England, several chairs in the natural sciences were established at Cambridge during the eighteenth century. But it was almost the middle of the nineteenth before the biological sciences and the laboratory method of instruction were introduced. Not until toward the close of that century did science become prominent at Cambridge and Oxford, and the most marked promotion of the scientific movement in England



has occurred since 1850 through the foundation of efficient municipal universities (see p 481). Higher courses in science have also come to be afforded through the foundation of the Royal School of Mines (1851), the Royal School of Naval Architecture and Marine Engineering (1864), the Normal School of Science (1868), and the Technical College (1881) of the London Institute, all of which were in 1907 merged into the Imperial College of Science and Technology. A further agency in encouraging the advanced study of science has been the national Science and Art Department, founded in 1858 and taken over by the national Board of Education when it was created in 1899 (see p 471). This organization likewise offers examinations and grants certificates to those aspiring to teach science in the elementary schools.

In English secondary education the "academies," in which science made its first appearance (p. 180), had before the close of the eighteenth century greatly declined, and the humanistic "public" schools and secondary institutions of a private character had as yet paid almost no attention to the sciences. In the first half of the nineteenth century an anti-classical campaign began, which brought about the foundation of numerous schools to embody the new ideals, and after 1848 the "secular" schools of Combe were opened generally in the larger cities of the United Kingdom. While short-lived, these schools did much to promote the introduction of sciences into secondary education that soon followed. Shortly after the middle of the century Rugby, and then Winchester, introduced science into the regular curriculum, and by 1868, as a result of the governmental investigation of the endowed schools, which showed an almost complete absence of science in the curricula, all

the leading secondary schools began to establish a "modern side." This course has generally included physics and natural history, as well as modern languages and history.

The study of science in elementary education has been aided by the Science and Art Department. As early as the middle of the nineteenth century grants were made to establish work in elementary science, art, and design, but the educational value was for more than forty years subordinated to practical applications. And while, after the report by a Committee of the British Association in 1889, much aid was furnished for the equipment of laboratories, lecture rooms, and workshops, and for an increase in the staff of instructors, for a decade no subjects except the rudiments were required in the elementary course, and such "supplementary" subjects as elementary science and geography, if taught, were given a special subsidy. But since 1900 this scientific work has been made compulsory in the elementary curriculum.

**Science instruction in the United States.** — In the colleges of the United States the courses showed considerable evidence of science teaching by the middle of the eighteenth century. Harvard, Yale, Princeton, King's (afterward Columbia), Dartmouth, Umon, and Pennsylvania had all come to offer work in "natural philosophy" or "natural history," which terms were then used to cover physics, chemistry, geology, astronomy, botany, and zoology. However, before the American Revolution physics seems to have been a subordinate branch of mathematical instruction, even less importance was attached to biology, and chemistry was only occasionally taught as an obscure and unimportant phase of physics. Laboratories and instruments of precision did not yet exist.

Since then whole fields of science have been discovered and defined, and others, like geology and astronomy, have been reclaimed from dogmatism, and science studies have slowly come into favor. Instruction in chemistry grew up through a study of materia medica at the medical schools of Pennsylvania (1768), Harvard (1782), and Dartmouth (1798). Separate chairs of chemistry were soon established at Princeton (1795), Columbia (1800), Yale (1802), Bowdoin (1805), South Carolina (1811), Dickinson (1811), and Williams (1812), and the movement continued until practically all the colleges had recognized it as an important branch of study. The subject was at first taught by demonstrations performed before the class by the instructors, but by the middle of the century students came to be admitted to the laboratories.

About the same time laboratories in physics began to be equipped with apparatus. Geology was included in the early professorship of chemistry at Yale, and was given a distinct chair upon the advent of James D. Dana about the middle of the century, while Amos Eaton taught it as a separate subject at Williams as early as 1825. Some attention was given to astronomy early in the century, although the instruments remained very ordinary and the methods authoritative and prescriptive until the opening of the observatories at Cincinnati (1844), Cambridge (1846), and Ann Arbor (1854). The biological sciences were even longer studied through mere observation rather than investigation and experiment. Until Louis Agassiz opened his laboratory at Harvard to students just after the middle of the century, the courses were meager, mostly theoretical and classificatory, and were given entirely by lecture, without field or laboratory work. Since then the development has been rapid.

But the greatest impulse was given to instruction in science through the publication of Darwin's *Origin of Species* (1859), and the dissemination of evolutionary doctrine through Asa Gray, professor of natural history at Harvard, and William B. Rogers, president of the Massachusetts Institute of Technology. The intellectual development ensuing also brought about the foundation of such new institutions as Cornell and Johns Hopkins Universities, which emphasized the teaching of science as an unconscious protest against the exclusively classical training. Scientific and technological schools likewise began to arise.

The Rensselaer Polytechnic Institute (1824) and the Lawrence Scientific School at Harvard (1847) had already been opened, but now similar schools of science, like Sheffield at Yale (1860), and the Massachusetts Institute of Technology (1862), sprang up in all parts of the country. In 1862 the Morrill act of Congress (see p. 423) appropriated lands in every state to promote education in agriculture, mechanic arts, and the natural sciences. These grants, which amounted at first to thirteen million acres, were subsequently extended to new states as they were admitted, and the endowment was increased by the annual grants of money that were made under later acts. From these funds and from private benefactions, additional schools of science were started or old schools were strengthened in every state.

Through the academy movement (pp. 169 f.) sciences were introduced into American secondary education. Sometimes these subjects were extended downward from the colleges, but often they had as yet been barely started by them. As the early high schools grew up, they continued the attention paid to the sciences by the academies

The first high school to appear, that at Boston in 1821 (pp. 366 f ), scheduled geography in the first year ; navigation and surveying in the second , and natural philosophy and astronomy in the third. A similar emphasis upon science appeared during the first half of the century in all the secondary institutions, whether known as academies, high schools, union schools, or city colleges.

In all cases, however, instruction was given mainly through textbooks, and, while experiments were frequently used for demonstration by the teacher, there was no laboratory work for the students. Moreover, a tendency to overload the curriculum with sciences was much increased during the seventies by the demand of the legislatures in several states that candidates for teachers' certificates pass an examination in several sciences. The high schools and academies endeavored to furnish the necessary training to prepare for these examinations, and until toward the end of the century the courses in the sciences were numerous and of rather superficial character. Since then, however, the schools have come to limit each student to a relatively few courses taught by thorough laboratory methods.

Except for geography, which appeared in the curriculum early in the century, the rudiments practically constituted the entire course of the elementary school until the time of Horace Mann. Largely through his efforts, physiology was widely introduced by the middle of the century. About a dozen years later the Pestalozzian object-teaching began to come in through the Oswego methods, although it tended to become formalized. Thus materials in several of the sciences came to be used, and the pupils were required to describe them in scientific terms. Toward the close of the nineteenth century the sciences

came to be presented more informally by the method generally known as "nature study." This movement quickly spread through the country, and has most recently appeared in the guise of agricultural instruction (see p. 521). Many states now require agriculture as a requisite for a teacher's certificate, and most normal schools have come to furnish a training in the subject.

#### THE SCIENTIFIC AS RELATED TO OTHER MOVEMENTS

It is evident that there has been a marked scientific movement in the educational systems of all countries during the past two hundred years. The sciences began to appear in the curricula of educational institutions in the seventeenth and eighteenth centuries, but their rapid increase, and the use of laboratories and the scientific method in instruction, dated from the middle of the nineteenth. In some respects this scientific movement has been closely related to the other modern tendencies in education — the psychological and the sociological.

**Relation to the psychological tendency.** — The coincidence of the scientific movement with the psychological on the question of formal discipline has been evident (pp. 184 f.). The influence of the development of the sciences upon educational method also constitutes part of the psychological movement. The sciences demanded entirely different methods of teaching from the traditional procedure. These innovations were worked out slowly by experimentation, and when they proved to be more in keeping with psychology, they reacted upon the teaching of the older subjects and came to be utilized in history, politics, philology, and other studies. A corresponding improvement in the presentation of the form, content, and arrangement of various subjects has taken place in

textbooks, and a radically different set of books and authors has been rendered necessary.

**Relation to the sociological tendency.** — The scientific movement has even more points in common with the sociological. In its opposition to the disciplinarians and its stress upon content rather than form, the scientific tendency coincides with the sociological, although the former looks rather to the natural sciences as a means of individual welfare, and the latter to the social and political sciences to equip the individual for life in social institutions and to secure the progress of society. But while the scientist usually states his argument in individual terms, because of his connection in time and sympathy with the individualism of the eighteenth and nineteenth centuries, the same writer usually, as in the case of Rousseau, Combe, Spencer, and Huxley, advocates the social, moral, and political sciences as a means of complete living. Similarly, the sociological movement has especial kinship with the economic and utilitarian aspects of the study of the sciences, for professional, technical, and commercial institutions have been evolved because of the demands of society as well as of science. Again, the use of the sciences in education as a means of preparing for life overlaps the modern sociological principle of furthering democracy. Both tendencies point toward the best development of all classes and to the abandonment of artificial strata in society.

#### SUMMARY OF THE CHAPTER

During the past two centuries a great growth has taken place in the natural sciences. For a long time this development affected practical life very little, but during the nineteenth century the application of science to industrial problems resulted in a host of inventions.

Because of the importance of the sciences to life, Spencer and others have urged the inclusion of them in the curricula of schools and colleges. While the content of the sciences has furnished the chief argument for this, many scientists have urged their value as formal discipline.

Instruction in the sciences has gradually been included in the higher, secondary, and elementary institutions of Germany, France, England, and the United States.

This marked scientific movement is allied with the psychological tendency in its improvement of method, and with the sociological in its emphasis upon human welfare.

### SELECTED READINGS

Arnold, Matthew *Culture and Anarchy* Macmillan Co., New York, 1928

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Ball, W. W. Rouse *A Short Account of the History of Mathematics*. Macmillan and Co., London, 1922

Presents a summary of the development of mathematics, illustrated by the lives and discoveries of those to whom the progress is mainly due.

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Dampier-Whetham, William C. D. *A History of Science* Macmillan Co., New York, 1931

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Chapter XIV is on Herbert Spencer and the Relative Value of Studies.

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These essays all magnify the study of the sciences, but the most effective is IV on A Liberal Education and Where to Find It.



National Society for the Study of Education. *Thirty-first Yearbook*, Part I Public School Publishing Co, Bloomington, Ill, 1932

Deals with the aims, methods, and curriculums, in the teaching of science at all levels.

Roberts, R. D. (editor) *Education in the Nineteenth Century* Cambridge University Press, 1901.

Chapter VII discusses the history of science teaching in the schools, higher and elementary, of England

Sedgwick, W. T., and Tyler, H. W. *A Short History of Science*. Macmillan Co, New York, new edition, 1935

Furnishes a broad general perspective of the evolution of science.

Sedgwick, William T. "Educational Value of the Methods of Science" in *Educational Review*, March, 1893, pp. 243-256

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Spencer, Herbert *Education, Intellectual, Moral, and Physical*

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## CHAPTER XX

### RECENT TENDENCIES IN AMERICAN EDUCATION

**Continuity of educational development.** — For the sake of convenience American education has been described in previous chapters as if divided into four distinct periods of development. These chapters have covered our educational history in the colonies (X), through the years of transition (XIII), in the course of the awakening (XV), and during its later development (XVII) respectively, and have undertaken to depict the progress of education from the first appearance of the religious and aristocratic schools transplanted from Europe in the early part of the seventeenth century down to the formation of definite systems of democratic education at the end of the nineteenth. Such a division into historical epochs may help us to grasp and interpret the innumerable facts and complicated conditions connected with the development of American education, but it entails an artificial separation and should not mislead us into supposing that such sharp lines of demarcation really exist. The growth of ideals, institutions, methods, and facilities in our educational system is clearly an unbroken process, and the characteristics we have attributed to the different periods will necessarily be found to overlap. These features should be regarded as indicating dominance and emphasis, rather than absolute change and distinction.

Quite as carefully should we avoid the impression that the evolution of American education was complete and

finished when once a plan of universal, free, and state-controlled schools had been organized. In a way, it may be said that education in this country has undergone more numerous and striking changes during the portion of the twentieth century thus far elapsed than it did from the days of its inception up to that period. While the educational development of the United States during the past half-century has largely been within a well-defined organization, modifications and advancement have been constant and rapid.

Such progress has, in general, been the outcome of our efforts to enlarge and enrich the principles of democratic education already outlined. To this end we have undertaken to extend existing privileges in education to all classes of people and to consider such opportunities a genuine birthright. Through legislation, state aid, consolidation, and transportation, for example, we have for forty years been striving to enable the children in the rural districts to secure educational opportunities comparable with those furnished to pupils in the cities and villages.<sup>1</sup> And through generous grants for Negro education, such as those from the Jeanes (1908), the Phelps-Stokes (1911), and the Rosenwald (1920) foundations, the public school systems in various Southern states have been stimulated to furnish colored children with material and intellectual facilities equal to those afforded to white boys and girls.

But we have further seen that educational practice itself must be continually adapted to the abilities and interests of all. We have come to feel that, to be truly democratic, education should reach everyone and provide

<sup>1</sup> See Cook, Katherine M., *Reorganization of School Units* in Selected Readings at the end of this chapter

for the peculiar development of each, and we have consistently undertaken to secure for all individuals and groups a chance to make the most of their natural endowment. Hence there has come to be a continuous progress in the creation of new types and units of organization, in the grouping of pupils and the adjustment of the individual pupil, in the formation and revision of a course of study, and in the materials and methods of teaching. It would, of course, be impossible to describe, even in the briefest manner, all the movements that have taken place, and it is difficult to select for consideration those which have proved to be most characteristic of the present era and most promising for the future. Yet some of the twentieth century tendencies that appear especially significant should at this point engage our attention.

#### VOCATIONAL AND SPECIAL EDUCATION

**Industrial training.** — The educational movement that has perhaps most characterized recent times is the introduction of vocational education into our school systems. Especially has there been a demand for training in industrial lines. From the preceding chapter we have gained some notion of the enormous number of applications of science to the needs and comforts of man, and of the necessity of adding instruction in these fields to our courses of study. Manufacturing, communication, and transportation have developed by leaps and bounds through a flood of inventions and discoveries, and factories, mills, and industrial plants of every sort have sprung up by thousands in all our large cities. As a result, millions of illiterate peoples from various lands have been attracted to our shores, and we have been forced to provide for their training and still more for that of their children.

The old methods of learning a trade or industry through apprenticeship and hard experience have broken down or been outmoded. Since the industrial revolution and the development of the factory system, the master can no longer work by the side of his employee and instruct him, and the modern industrial plant is but poorly adapted to supplying the necessary theoretical or practical training. Hence a public agency, the school, has been called upon to assist in the solution of these new social and industrial problems.

As compared with leading European countries such as Germany, France, and England, the United States has proved laggard in furnishing industrial training as part of its public system of education. The real development of such work can scarcely be said to have started in American schools before the twentieth century. By that time it had at length become evident that natural ability and adaptability were no longer sufficient in the industries, but that the development of technical knowledge and skill was required. Prior to this some industrial training had been undertaken, but it was furnished entirely through philanthropic and private enterprise and was conducted largely at night. The Cooper Union in New York, the Franklin Union in Philadelphia, and the "mechanics' institutes" in various cities offered evening courses in drawing, mathematics, science, and trade and technical subjects during the latter half of the nineteenth century, and by the beginning of the twentieth three vocational institutions — New York Trade School, Williamson School of Mechanical Trades near Philadelphia, and Baron de Hirsch Trade School in New York — were even furnishing a limited amount of work in the daytime. Since then development has been rapid, and

some fifty of such private vocational institutions have been organized in different parts of the country.

It was not until 1906, however, that the first public trade school was established. In that year Columbus, Georgia, established as an integral part of the city system a Secondary Industrial School, in which specific trades were to be taught. A year later the Milwaukee School of Trades was adopted by the city. These two institutions were soon followed by the organization of public trade schools in Philadelphia, Portland (Oregon), Worcester, Indianapolis, and elsewhere, and since 1910 secondary training to equip leaders for the industries has come to be furnished through industrial high schools in hundreds of cities. Such schools were founded mostly for youths between sixteen and twenty-five, but preparatory trade schools for younger boys were also opened in the public systems of New York, Massachusetts, and other states. These latter schools offered courses in drawing, elementary science, shop calculations, accounting, business forms, history, and English, and afforded a general knowledge of shop materials and methods, rather than training in a particular trade.

Likewise the United States has adopted the European plan of "continuation" or "part-time" schools. This type of training was at first made permissive in the schools of New York by legislation in 1910, but the next year Wisconsin provided for continuation schools on a compulsory basis. Then within five years three other states — Ohio, Pennsylvania, and Indiana — followed, and while the development of this part-time project fell off somewhat during the war years, by 1925 the legislatures in more than half the states of the Union had come to institute such schools. Under various enactments

working young people from fourteen to sixteen or even eighteen years of age, who were not high school graduates, were required to attend continuation schools four to eight hours each week, and employers were compelled to grant them this time without reduction of pay.

The courses thus established differ in various places, but in all of them the chief aim is preparation for specific industries together with training for citizenship. In some cities the continuation schools are of two kinds, general and special. The general schools are open to pupils in a particular district and afford exploratory courses, followed by training in some line that has been found of interest to the pupils. The special schools are centrally located and usually teach more advanced pupils a single industry, such as printing, dressmaking, millinery, building, metal, or electrical trades.

**Agricultural, home economics, and commercial training.** — Thus several thousand public schools in America began to offer industrial training of some sort during the first quarter of the twentieth century. Certain other forms of vocational education — agricultural, home economics, commercial — have had a similar history. Begun in the latter part of the nineteenth century through private enterprise, training in these fields was gradually established by the public system of most cities and not a few villages and rural centers, and the work came to be offered at every level and through extension and correspondence instruction. This vocational work was greatly promoted by the Smith-Lever act passed by Congress in 1914 and the Smith-Hughes act three years later. Both these enactments furnished federal subsidies to the several states on the basis that each should expend for a particular educational purpose an amount at least

equal to that allowed by the national government. The Smith-Lever law provided for extension education in agriculture and home economics, and the Smith-Hughes act furnished instruction below college grade in agriculture, homemaking, industry, and commerce. The amount of federal aid given for these purposes was substantially increased from time to time, and, together with the contributions of the states, counties, and communities, the total annual expenditures have long since exceeded fifty million dollars.

**Adult education.** — Education for adults has also come to receive increasing attention. While public evening schools, both elementary and high, were well under way in the nineteenth century, they were intended to provide elementary education for those who could not attend during the day. During the twentieth century the work has been greatly extended and changed in character. Compulsory attendance has largely removed the necessity of furnishing elementary training for native Americans whose education has been neglected, but the great influx of foreigners, already noted (p. 518), has brought about the establishment of evening courses for adults in English and in citizenship. In particular, for about a decade after the close of the World War in 1918, "Americanization" or "immigrant education" became a conspicuous feature in the public systems of all large centers.

Moreover, the extension of public education to adults has not been confined to elementary training of the foreign-born, but has come to be furnished to men and women in all walks of life seeking relief from wearisome pursuits through various forms of cultural, technical, commercial, and industrial training. A growing con-



viction has developed that education should not be static but continuous throughout life. This feeling was greatly emphasized after 1930 as a result of the number of people out of employment and the consequent attention that was given to utilizing enforced leisure to the best advantage. While many of these opportunities were furnished through philanthropic and private sources, systems of public education came to be primarily responsible, and during the years 1933-1937 much of the support for this adult training was furnished by state and federal relief funds.

**Schools for the handicapped.** — In the twentieth century public education has also come to concern itself more fully with the training of various groups of pupils that have been handicapped through heredity, disease, or accident. Paralleling the regular work of the elementary school and to some extent that of the high school, there have appeared throughout the United States special schools adapted to the needs of the deaf, blind, speech defective, crippled, and tubercular, and of the subnormal and mentally defective. In undertaking to educate these physically and mentally handicapped children, Europe again anticipated America, but during the latter half of the nineteenth century in most of the states some schools, though often crude and furnished under private auspices, had come to be provided at least for the deaf, blind, and feeble-minded.

Since 1900 these schools have greatly increased in number, developed in efficiency, and come under state or city control, and similar public provision has been made for milder defects. By 1935 there were some seventy state schools for the deaf, sixty for the blind, and about as many for the feeble-minded, and few states altogether

failed to maintain such educational facilities. As part of the public system, too, ninety large cities were by this time supporting schools for the deaf, forty to fifty were providing classes for the blind and making provision for sight conservation, and more than one hundred and fifty were furnishing subnormal pupils with special education. Just before the twentieth century began, Chicago opened the first public school for crippled children and within a decade a fair number of other cities had undertaken similar educational service. In 1907 Providence became the first American city to adopt the German "open-air" school for the tubercular and anemic, but within the next half-dozen years nearly fifty cities made similar provision.

In all these special classes for physical and mental defects it has seemed desirable to have the handicapped mingle with other pupils in the public system as far as possible, that they may not develop a consciousness of peculiarity, but it has often been found necessary to have special buildings and equipment to meet the needs of the various types. Children who are mentally subnormal usually cannot be taught in the same classes with others. The anemic and tubercular must have opportunities for "fresh air" and "open air" treatment separate from the classes of healthy pupils. For the crippled, buildings need to be devised with elevators, ramps, and additional means of transportation. Schools with rhythmic floors and visual signs and signals are found necessary for the deaf. Pupils who are becoming progressively blind or require sight conservation may have to be housed in buildings equipped with special lighting and be provided with coarser pencils and a larger print. Moreover, children of these peculiar types have to be selected and classified by physicians and psychologists, and provided with material

and apparatus specially adapted to their needs. Every effort is now being exercised by the public school system to build up children with physical or mental defects into as effective members of society as possible.

Special schools have also been established in public systems for children who have been handicapped by natural disposition or unfortunate environment and have been classed as "refractory" or even "incurable." These schools have, however, been more frequently under state than local administration. Some of them were opened before the close of the nineteenth century, but since then they have grown to be nearly two hundred in number and have met with their best development. In the city systems such cases are generally handled through small "disciplinary" classes in the regular school, but where pupils have cast away all control of parents and teachers, it has been found necessary to have them sent to "parental" schools for an indefinite period. Some of these institutions are under rigid military discipline, but others follow a milder regimen and endeavor to soften the pupils gradually through sympathy and moral suasion.

#### NEW UNITS IN THE SCHOOL ORGANIZATION

**Changed character of our high schools.**—Some of the units in the public school system, while retaining their old names, have in recent years met with such great internal changes as to become virtually new institutions. This has been peculiarly true of our high schools, which during the first quarter of the twentieth century approximately trebled their numbers and quintupled their attendance. By 1925 more than two million young men and women had come to attend our high schools and momentous problems had thus arisen in connection

with the course of study. Many of those in attendance at these institutions were possessed of limited intelligence and intellectual traditions, and were not adapted to the conventional curriculum offered in public secondary education. It was necessary, therefore, to do something to accommodate the work to the ability and needs of such pupils.

Hence a variety of new courses — modern language, scientific, English, manual arts, technical, commercial, agricultural, home economics — were gradually added to the college preparatory course, which, in spite of the democratic origin of our high schools, had largely monopolized the curriculum. A wide range of election, moreover, was allowed within each of these courses. Sometimes differentiated curricula were offered in separate high school buildings, but more often they existed under one roof in a single "cosmopolitan" or "composite" high school.

**Development of junior high schools.** — Meanwhile an entirely new type of institution, generally known as the "junior high school," was being developed to analyze the abilities and needs of public school children and guide them in choosing their secondary work. Junior high schools, which seem to have started in Berkeley and Los Angeles, California, and in Columbus, Ohio, about 1909-1910, usually combined the seventh and eighth grades of the elementary schools with the first year of the high school, and were primarily intended to instruct pupils more in keeping with their individual interests. While elementary work was continued by them to some extent, this was in a gradually diminishing degree, and the curriculum was increasingly differentiated into courses adapted to various groups of pupils. An opportunity was afforded for pupils to "explore" the fields of the

classics, literature, technology, homemaking, commerce, agriculture, and industry, and thus discover the work best suited to their needs. Meanwhile a diagnosis was made of the abilities, aptitudes, and interests of each individual pupil, and skilled guidance in determining his career was furnished him.

These objectives of junior high schools have necessitated radical changes in teaching and equipment. In these new structures, modeled after high schools, auditoriums, laboratories, shops, gymnasiums, lockers, new and enriched courses of study, the elective principle, departmental teaching, promotion by subjects, and teachers with careful training in their special fields, have all been demanded. Consequently, the junior high units in our public school system have proved expensive, but the advantages offered by them have been correspondingly large. When effectively conducted, these institutions have produced an increase in the number of pupils desiring secondary education, and a heightening of academic success. In consequence, the number of junior high schools rose during the first quarter-century of their existence into the thousands. Within the decade from 1920 to 1930 alone, the pupils attending them increased twenty-fold and became a million and a quarter strong.

**The origin and nature of junior colleges.** — During the twentieth century, too, there has been evolved in higher education a type of two-year institution, known as the "junior college." The idea of the junior college was first suggested by President William R. Harper of the University of Chicago about 1900 and an actual sample of this institution arose two years later at Joliet, Illinois, but many factors then came to be introduced into the situation and postponed the development of junior

colleges on a large scale. In consequence, this did not occur until somewhat later than in the case of junior high schools. In the first instance these institutions were suggested as a means of enabling poorly endowed colleges to concentrate their resources through eliminating their junior and senior years and affiliating with a four-year college or university. But a more prolific junior college movement came through the addition of two years to the course of certain high schools, where the work could largely be supported by local taxation and state aid. Likewise many private academies and seminaries, especially those for girls, evolved into junior colleges by adding two years of higher work. Junior college courses, too, came to be maintained, especially in California, at state expense in conjunction with normal schools or teachers colleges. Finally, some original foundations of junior colleges have also been made.

Junior colleges are intended to meet a variety of social and economic demands. They may furnish a short course for young people who seem too immature to leave home or who lack the financial resources to go away, or for students who wish to obtain sufficient preparation to enter a professional school. The curriculum may confine itself largely to the subjects usually given in the first two years of a four-year college and depend for its continuation upon some four-year college, or it may be terminal in character and include a considerable range of vocational subjects, with a view to guiding students in the choice of a life work. In the latter case considerable emphasis is placed upon a study of individuals, educational guidance, and efficient teaching. By 1936 junior colleges had been established in most states of the Union and had come to be more than five hundred in number.

**Development of "nursery schools."** — The American system of education has also been expanded by addition of a unit at the lower end, known as the "nursery school." We have seen (pp. 404 f.) that at the beginning of the twentieth century kindergartens, which are attended by young children from the age of five to six, had been widely accepted as part of the public system. More recently the nursery schools, akin to the modern kindergarten, but on a more scientific basis, have been started to meet the needs of still younger children. The development of these institutions has taken place through the movement generically known as "pre-school education." Various phases of the movement are concerned with research in child development and with instruction to parents, but our interest here is especially in the "nursery schools," created for training children from two to five years of age.

Such work was probably first introduced into the United States at the Merrill-Palmer School, Detroit, by Edna N. White in 1921, but within a decade it was taken up at a dozen or two other research and graduate centers. A large number of nursery schools came into existence, and the institution began to be absorbed into the public school system. Much in human character and personality that had previously been supposed to be inherited was now felt to be acquired in infancy and early childhood, and the nursery schools undertook to discover how desirable traits can be built up and to embody the necessary training in education as early as possible. The course of study was not standardized and no two nursery schools were exactly alike, but by 1936 about twenty-five hundred of these institutions had been established in the United States.

## NEW CLASSIFICATION, CURRICULUM, AND METHODS

**Early attempts to improve classification.** — Not only have many new units been introduced into public education during the twentieth century, but the classification and adjustment of courses to the interests and needs of all the children have been greatly improved. In keeping with the modern movement to produce rightly directed growth in each pupil, the old inflexible system of classification, with its single course of study for each grade, has been modified in a variety of ways. Instead of attempting to accommodate the different kinds of ability to the stereotyped organization by means of "acceleration" (granting double promotions to the bright child) and "retardation" (repeating the grade for the dull one), an effort is generally being made to study the pupils as individuals, and to adapt both the grouping and the curriculum to the needs of each child.

Even before the close of the nineteenth century, plans to care for the progress and success of the individual pupil had been formed. During the last decade of the old and the first decade of the new century efforts were made to re-group pupils at short intervals according to their achievement by Search at Pueblo and by Shearer in his "Elizabeth system." At this time the "Cambridge plan" also was formulated, whereby a basal eight-year course was paralleled by one of six years, with a possibility of promotion three times a year, so that the work might be completed within various periods ranging from six to eight years. A more advanced step was taken in the "differentiated courses," planned at Santa Barbara by Burk and adopted at Baltimore by Van Sickle, where the material was itself modified according



to the needs of various types of pupils. Quite a different approach was found in the plan of "adjustment" through employing an extra teacher to give special assistance to the slow pupils at Batavia (New York), to the brighter children at North Denver (Colorado), and to both groups at Newton (Massachusetts).

**More fundamental reorganizations.**— Since around 1910 some more fundamental changes in class organization have been crystallized in various places. The Gary (Indiana) plan, worked out by Wirt in the course of a few years just preceding 1915, permitted considerable flexibility in the adjustment of pupils to the work. The chief characteristic of this system was the division of all classes in a school into two large groups of pupils, and the alternation of their work between regular classrooms, where the "drill" subjects were taught, and the gymnasium, auditorium, shops, playground, or other places adapted to special activities, which furnished training for the social, physical, and vocational phases of life. Thus a pupil who needed special instruction in any subject was afforded an opportunity to secure it during a play or auditorium period. Wirt started this reorganization largely to produce a more effective use of the school plant in a rapidly growing city where it was difficult to keep pace with building needs, but it was soon found to contribute to individual instruction and educational enrichment, and has been adapted to the needs of many other school systems under the name of the "duplicate school," "platoon system," or "work-study-play" plan.

Two other reorganized forms of classification were introduced into the public school system about 1919-1920. These were the "Dalton method," devised by Helen

Parkhurst and named by her in honor of a town in Massachusetts, and the "Winnetka plan," so called by Washburne after the small Illinois city where it was inaugurated. In general, the former method involves a species of "contract system," in which each pupil agrees to complete a total amount of work within a given period, such as a week or a month, and is left to his own devices as to ways and means of accomplishing it. Thus each pupil progresses as fast as he is able without regard to others. Under the Winnetka plan, however, instruction in the social sciences, as well as other fields in the higher grades, is carried on by a group, though the "fundamentals" are acquired individually. The goals to be attained in the latter studies are defined for the pupils, and are analyzed and subdivided so that the necessary progress is made obvious in the form of concrete habits and skills. Whenever a pupil finds that he has perfected himself in any line, as for example the ability to add a column of five three-place figures, he enters a score upon a "goal card" and, after having his achievement checked by the teacher, may go on to the next goal at his own pace.

**Ability grouping and individual adjustment.** — Such have been some of the attempts to modify the traditional classification so as to meet the needs of individual pupils in our public schools. Recently efforts have been made to place the individual instruction within classes upon a more nearly scientific basis. Educational psychology and educational tests and measurements (pp 542 ff) have opened up a mine of information concerning the differences among individuals and afforded a better method of meeting individual needs. These plans may, in general, be grouped under two heads. They involve differentiation of the course according to the ability of

the pupils, on the one hand, and special attention to the individual pupils as they need it, on the other.

The former method, known as "ability grouping," was probably first undertaken on a large scale at Detroit in 1920, and was before long adopted by Los Angeles and a number of other cities. Under this plan the members of a class are combined in two or more sections and taught according to what has been found by scientific testing to be their capacity, and adjustment is produced on a wholesale and automatic basis. By placing gifted pupils together, an enriched curriculum can be arranged for them, and through assembling those of low ability a minimum course of study within their reach can be set up. The second method, known as "individual adjustment," furnishes a more refined procedure for meeting the needs of every pupil, and has gradually come to be used as a supplement to ability grouping. Ability grouping is a convenient device for meeting the situation in the rough, but, after all, it only narrows the range of heterogeneity. Through individual adjustment, on the other hand, each pupil gets the benefit of a study of his particular case and is enabled to have attention paid to his special needs. While there are still many schools where there is little attempt at ability grouping and much less at individual adjustment, both these procedures have rapidly been working their way into public school practice.

**Curriculum revision.** — Not only have efforts been made to improve class organization and the progress of individual pupils, but a leavening and reorganization in the material of the curriculum itself has generally been taking place. The expansion of our population in the United States and the changes in our industrial and social life, together with our recognition of the child as a bundle

of undeveloped capacities and tendencies toward activity, receiving stimulation from a new and changed environment, have forced upon us a recognition of the need to adapt the curriculum to child activity, individuality, and creative expression. No longer is the course of study mainly constructed through shears and pastepot, but since about 1910 efforts to reconstruct the curriculum completely and bring it into line with the best educational practice have widely sprung up. Fully three-quarters of our city systems are now making a general revision of their curricula every five or six years, while nearly one-half do so at shorter intervals. In many of the larger cities, such as Chicago, Denver, Detroit, Kansas City, Los Angeles, Minneapolis, Pittsburgh, and Rochester, a separate bureau of curriculum research has been established, and a program of continuous revision initiated.

Everywhere public education has been creating agencies to stimulate specific researches in the curriculum and to guide and co-ordinate these efforts. A number of substantial reports on the subject have been presented by educational organizations. In 1920, through its Secondary Department, the National Education Association sponsored a series of documents on the reorganization of secondary education, and from 1924 to 1928 the *Yearbooks* of the Department of Superintendence furnished an elaborate set of reports dealing with existing curriculum revision in elementary and high schools. A most comprehensive treatment of modern tendencies in this field is found in the *Twenty-seventh Yearbook* (1927) of the National Society for the Study of Education, which especially undertook to determine general principles rather than to report curriculum revision in given places, and the *Twenty-ninth Yearbook* (1930) of the same organization

used Part II for a discussion of research in the subject matter of arithmetic. Finally, since 1931 the American Educational Research Association has been reviewing the various fields of investigation and has devoted special issues of its publications to problems of the curriculum.

**The developmental methods.** — Methods of teaching have likewise met with great improvement in recent years. Thanks to the conception of education as "activity" popularized by Froebel, a variety of improved classroom methods were developed in the first quarter of the twentieth century. While these forms of approach differed widely among themselves, they implied a common attitude toward the educational process and might all be classified under the head of "developmental methods." In this procedure emphasis is laid upon teaching pupils, rather than subject-matter. The general purpose of such a method is not to test what has been memorized by the pupils, but to enable them to form their own judgments and work out difficulties in their own way, with only such assistance as is genuinely economical of time and energy.

Among such newer methods may be classed the "socialized recitation," where the conduct of the discussion is as far as possible relegated to the members of the class; the "problem method," where the pupil is encouraged to organize the material for himself around some central problem, rather than to memorize mechanically, and the "project lesson," which involves activity in the accomplishment of some project in which the pupil's interest has been centered. It is clear that all these developmental methods afford great flexibility in dealing with the individuals of a class, and, in skillful hands, may

become most vitalizing and stimulating. They are, however, beset by the constant danger of aimless wandering unless careful guidance is exercised by the teacher, and they may become quite as set and formalized as the old question-and-answer recitation or the five steps of Herbartian instruction.

**The Montessori method.** — A more spectacular development in modern educational method was that originating with Maria Montessori at Rome and introduced into the United States about 1911. This educational system was originally intended for mental defectives and borrowed its "didactic apparatus" and methods largely from Seguin, but was applied by Montessori to normal children, where its usefulness was more doubtful. In her system she emphasized sense training and the individuality and freedom of the child, holding with Rousseau and Froebel to the rightness of child nature and natural development, but she did not realize that education is itself life and that the activities of real life can be utilized in training children.

The materials and methods employed make the Montessori system little more than a development of the kindergarten, but for nearly a decade it swept the country. This was largely due, however, to the entirely extraneous feature of a successful plan for teaching formal school studies, especially writing, at an exceptionally early age. A multitude of Montessori schools sprang up, but later analysis of the fundamental ideas revealed the fact that the method proper was based on the outworn "faculty psychology" (p. 184) and a dubious plan of sense training, and American interest waned as rapidly as it had begun. Apparently all values in it could be absorbed by the modern kindergarten and nursery school.

**Dewey's experimental school and educational philosophy.**—More far-reaching were the contributions to the curriculum and methods of teaching made by John Dewey (1859– ), who possibly possesses the most philosophic mind that American education has known and who was the leader in educational reconstruction during the first third of the twentieth century (Fig. 83). His promotion of educational theory and practice largely originated in an experimental school connected with the University of Chicago and under his supervision from 1896 to 1903. Dewey realized that great social and industrial changes had been taking place in American life, and undertook to bring the children in his school into touch with the situation and give them an understanding of the world in which they lived.



FIG 83 John Dewey

The means of accomplishing this he found largely in a study of industries. Since industries are most fundamental in the thought, ideals, and social organization of a people, these activities must have the most prominent place in the course of a school. "The school cannot be a preparation for social life except as it reproduces the typical conditions of life" The material for furnishing this industrial activity was mainly shopwork, cooking, sewing, and weaving, although many subsidiary activities were also used. This training was carried on, not for the purpose of furnishing facts or principles to be learned,

but for enabling the child to engage in social life in the miniature. "The school is not preparation for life, it is life." The occupations were intended to be liberalizing, not technical, and considerable time was given to an historical study of them (Fig. 84).

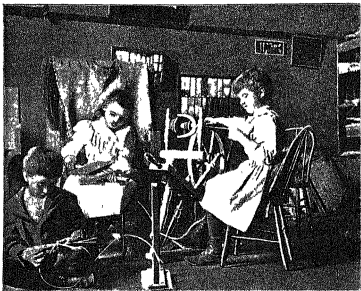


FIG 84 Activities in the University Elementary School.

"The Dewey laboratory school," reproduced from the *Elementary School Record*, by permission of the University of Chicago Press

It can be seen how fully this plan is in accord with the real principles of social co-operation and expression of individual activities underlying the work of Froebel. "So far as these statements correctly represented Froebel's educational philosophy," Dewey declares, "the school should be regarded as its exponent." But these industrial activities of the Chicago experimental school were not primarily suggested by Froebel's work, and were more



expressive of real life. They never became as stereotyped and external as the "gifts" or even as the "occupations" of the kindergarten have generally been. In carrying on these activities Dewey insisted that the child should be "given, wherever possible, intellectual responsibility for selecting the materials and instruments that are most fit, and given an opportunity to think out his own model and plan of work, led to perceive his own errors, and find how to correct them."

Thus the children were introduced into the complexities of present-day living through simplified experiences and terms they could understand. They learned to do by doing, rather than by merely listening, and were prepared for social efficiency and participation in democratic society not by mere passive obedience but by acquiring the necessary social insight and initiative and meeting the responsibilities of that society. The educational philosophy developed in this experimental school was embodied by Dewey in his little book, *The School and Society*, published in 1899. A decade later, after removing to Columbia University, he presented his general theory of learning in *How We Think* (1910), which indicates that all advances in living are achieved through our efforts to overcome the inadequacies of past experiences and through using these experiences as resources for developing those of the future. Finally, in *Democracy and Education* (1916) Dewey rounded out the statement of his educational philosophy.

#### FUNDAMENTAL TENDENCIES IN PRESENT EDUCATION

**Progressive education.** — The experiment in education developed by Dewey at Chicago is still yielding fruitage. The example set by him was instrumental in stimulating

forty or fifty similar undertakings elsewhere, and has influenced both the theory and the practice of the present day. Either as a direct result of Dewey's work or through independent thought, there has sprung up an important group of schools in which an effort has been made to bring boys and girls of elementary school age into more intimate relation to the community life about them. Among these have been the Francis W. Parker School in Chicago (1901), the School of Organic Education in Fairhope, Alabama (1907), the Park School in Baltimore (1912); the Phoebe Ann Thorne School of Bryn Mawr College (1913), the City and Country School in New York City (1913), the Walden School in New York City (1914); the Oak Lane Country Day School in Philadelphia (1916), the Lincoln School of Teachers College, Columbia University (1917), the Moraine Park School in Dayton, Ohio (1917); the Chevy Chase Country School in Washington (1919), the Beaver Country Day School in Brookline, Massachusetts (1921); and the John Dewey School in Hollywood (1930).

These experimental or "laboratory" schools, while differing greatly among themselves in nature and scope, have alike endeavored to apply a new conception of the nature of children and of the learning process to education. Their activities largely constitute the movement now known as "progressive education," which is one of the most significant of the present day. It is, of course, impossible to describe the procedure in all these experiments, but a good illustration is afforded by the University Elementary School developed at Columbia, Missouri, under Junius L. Meriam. Its function was to help children do better in all those wholesome activities in which they normally engage. His school did not attend

to reading, writing, and arithmetic as such, but to particular activities of children, including (1) play, (2) observation, (3) handwork, and (4) stories, music, and art. These four "studies," representing real life, irrespective of the school, constituted the curriculum, and the "three R's" were studied only as they sprang out of them. Their content, therefore, being used as in life to meet real needs, was studied most effectively.

While the "progressive" schools have been steadily gaining ground, and have organized an association of their own, there has been much criticism of their complete repudiation of drill and of their chaotic "freedom" by members of the old school. A middle ground between the progressive position and the rigid formalism of the traditionalists has been taken by Charles H. Judd (1873-



FIG 85 Charles H Judd

), professor of Education and successor to Dewey and Parker in the direction of the School of Education at the University of Chicago (Fig. 85). He has undertaken to produce an improvement in both method and content of his Elementary School through scientific research (see p. 545) and the organization of spontaneous activity.

**Statistical methods and measurements of achievement.** — Another significant movement of the present day is the application of statistical methods to problems of education. Statistics have long been used, though often

without clearness or accuracy, in reports on school administration, but it remained for thinkers in this century to apply to the various phases of education the same general technique and approximately the same precision as that long demanded by the physical and biological sciences. Quantitative, unambiguous statements are now sought not only for the phenomena of attendance, retardation,



FIG. 86 Edward L. Thorndike

expenditures, and the like, but also for relative and absolute amounts of knowledge. As a consequence, emphasis has been placed upon the actual results of education rather than upon the declaration of intentions. Where the movement initiated by Dewey was concerned in improving educational methods, the objective of this tendency has been the measurement of the products of education.

One of the first scholars to apply the scientific principle of statistics to education was Edward L. Thorndike (1874- ) of Columbia University (Fig. 86). In his *Educational Psychology* (1902) he illustrated how a quantitative description of individual differences and of the factors that condition them is necessary to throw real light upon educational theory and practice, and in his *Mental and Social Measurements* (1904) he presented the details of the method. Subsequently he maintained, in the face of much opposition, that "scales," as objective and as impersonal as possible, should and could be devised

for measuring variations in ability and changes that take place as a result of natural growth and instruction.

Such scales, beginning at an ascertained zero and progressing by regular steps to a point near perfection, because of the complexity of their elements, are difficult to construct, but they have been set forth more or less

*Then the carelessly dressed gentleman stepped  
lightly into Warren's carriage and held out a  
ish behind the bushes and the car-  
riage moved along down the driveway.  
The audience of passers-by which had*

*Then the carelessly dressed gentleman  
stepped lightly into Warren's carriage and*

*Then the carelessly dressed  
gentlemen stepped lightly  
into Warren's carriage and*

FIG 87 Specimen No 13 taken from the "Thorndike Writing Scale" This specimen constitutes the approximate quality of handwriting that may reasonably be expected of pupils in the seventh or eighth grade In the complete scale the specimens are numbered from 4 to 18

tentatively by various investigators for practically all the elementary and secondary school subjects. In 1910 Thorndike devised his Handwriting Scale (Fig. 87), but subsequently more refined scales in the field were elaborated by Ayres, Freeman, and Starch. Other well-known measurements of this kind have been the Woody Arithmetic Scales, the Hillegas Scale in English Composition, the Thorndike-McCall Reading Scale, the

Ayres Scales in Reading, the Iowa Spelling Scale, the Ayres-Buckingham Scales in Spelling, the Hahn Scales in History and in Geography, and the Van Wagenen Scale for English Literature.

Another form of educational measurement has been the series of standardized "tests" devised for the various school subjects. In these the determination is effected by counting the number of units accomplished by a pupil in a given time, where the things to be done are either of equal difficulty or have had their relative difficulty ascertained. Probably the first measurement of this sort to be found was the Reasoning Test in Arithmetic (1908), devised by Thorndike's pupil, Clifford W. Stone. Since then more than a hundred reputable tests have been formulated to measure achievement in the various school subjects. These include the series in Arithmetic worked out by Courtis at various times, the Gray Tests in Reading, the Monroe Test in Spelling, the Briggs Test on English Form, the Hotz Test in Algebra, the Witham Test in Geography, the Gregory Test in American History, the Minnick Tests in Geometry, the Iowa Physics Tests, and the Handschin Tests in Modern Languages.

Several "batteries" of educational tests (i.e., combinations of tests intended to ascertain the effectiveness of a school as a whole or a pupil's average standing) have also been devised. Of these perhaps the most frequently used is the Stanford Achievement Test, which consists of six tests on paragraph meaning, sentence meaning, word meaning, computation, arithmetic reasoning, and spelling, respectively. Likewise diagnostic tests, such as those of Monroe in Arithmetic, Freeman in Handwriting, Charters in Language, and Pressey in English Composition, have been devised to reveal the

particular nature of each pupil's shortcomings and help him to remedy them. In this diagnosis of processes used in learning the elementary subjects, the School of Education at the University of Chicago, under the direction of Doctor Judd (see p. 541), has been among the most prominent. Various diagnostic and remedial procedures have come to be used in "surveys" (see p. 547), and other efforts to improve school systems.

**Intelligence tests and school surveys.**— Since 1908 efforts have also been made to measure a pupil's general ability or "intelligence." It is now recognized that intelligence is not a unitary process, but is composed of many distinct abilities, and that a pupil may stand high in one type of ability and low in another. Hence, if we wish to ascertain his intelligence and his probable success in school, it is necessary to measure him in a variety of tests and combine the results in a composite score. This has been undertaken in more than eighty systems of intelligence tests devised by various authors, which in general resemble one another. The total score made by a pupil on the various sets of questions is compared with the median score made by thousands of pupils at the various ages, and his "mental age" is held to be that with which his score most nearly tallies. His "intelligence quotient," or I Q., which represents his degree of brightness, can then be found by dividing his mental age by his actual or chronological age, and multiplying by 100, to clear of decimal fractions.

The earliest intelligence test, formulated in 1907 by the French psychologist, Binet, was before long brought to the United States by Goddard. Within a decade a number of adaptations were made by American investigators, such as Goddard, Cattell, and Kuhlman, but probably

the most popular has been the Stanford Revision of the Binet-Simon prepared by Lewis M. Terman (1879- ) in 1916 (Fig. 88). This is a test for individuals and requires careful attention and considerable expenditure of time for each pupil, but five years after its publication the



FIG 88 Lewis M Terman

measurement of intelligence was adapted to economical use through the creation of "group tests" by which the mental abilities of all pupils in a class can be estimated within a few hours. Among the best-known group intelligence tests are the National, Terman, Haggerty, and Otis. While they are for the most part based on the same principles, in general each one is better adapted to particular grades or high school and college classes.

In certain "battery" and other examinations an intelligence rating is combined with the achievement tests, described above. An "educational quotient" (E Q.) is found by dividing the "achievement age" by the chronological age, and so takes account of the opportunity the pupil has been given, while his "achievement quotient" (A Q.), determined by dividing his achievement by his mental age, reveals whether he has done as well as he was capable of doing. Thus achievement and intelligence tests, singly and combined, can be made of real value to education, both in classification and promotion of pupils



(see p. 532), and in educational and vocational guidance (see p. 527). They have also been widely used in "surveys" of city, county, state, national, and denominational systems of education.

These surveys have themselves arisen during recent years and are worthy of some consideration here. Their object has been to improve educational practice and render more effective the organization, administration, supervision, curriculum, support, and control of schools. Formal inspections or surveys of educational systems had been made for half a century or more, but they could not be upon a very precise or significant basis before objective standards of measurement had been set up. It was not until the second decade of the century that the change from shrewd guesswork to something approaching scientific accuracy took place.

The first surveys of this type were probably those directed by Paul H. Hanus at Montclair and by Elmer E. Brown at Baltimore in 1911. These were followed by the more elaborate survey of New York City schools under the direction of Hanus in 1911-1912, and during the next decade by similar efforts at Boise, Portland, Cleveland, Salt Lake, and dozens of other cities. In these projects Ellwood P. Cubberley (1868- ), dean of the School of Education, Stanford University, and George D. Strayer (1876- ), professor in Teachers College, Columbia University, have been the most active leaders. About the same time surveys of entire states began, and before 1930 reports had been made upon Vermont, Maryland, Delaware, North Carolina, Kentucky, Indiana, Virginia, Florida, and a number of other commonwealths. A more comprehensive and thorough undertaking was the survey of New York undertaken in 1935-1937. It was

financed by a grant of over half a million dollars from the General Education Board (see p 414), and has been known as the Regents' Inquiry into the Character and Cost of Public Education in the State of New York. Both the director of this survey, Luther H. Gulick, head of the Institute of Public Administration, and the associate director, Samuel P. Capen, chancellor of the University of Buffalo, have had considerable experience with similar projects, the one on the side of finance and the other on the educational side.

**Influence of the theory of evolution.** — But even more significant and far-reaching than the experimental attitude toward educational procedure and the statistical and objective measurement of educational product, is the influence upon education that has been exerted by the Darwinian theory of evolution. This fruitful hypothesis came to be generally accepted by the opening of the twentieth century as a guiding principle, and since then it has constantly increased in the illumination it has shed upon the educative process. It has wrought much the same changes in the treatment of intelligence that it did in the biological sciences. Consciousness is no longer regarded as a fixed set of entities, but as a developmental process. Instead of classifying and cataloguing mental processes in fixed groups, efforts are made to study their growth from the standpoint of both the race and the individual. It is held that only through a knowledge of its origin and development can any phase of mentality be at all understood, and that it must be carefully traced from its incipient to its most advanced stages.

Thus both the traditional conception of a fixed and unchanging social order and the doctrine of "original sin" in the individual child have been alike upset. The view

of children and child life has been considerably changed. The basic imagery, depicted by the old education, of a child's mind as a species of empty reservoir and the implication that the function of the classroom is to fill this receptacle with certain fixed facts, have been largely rejected in twentieth century education. In the place of the old knowledge and disciplinary view of education, the educational process has now come to be conceived of as development. It is coming to be realized that the pupil's most salient characteristic is not that of passive reception, but of activity and behavior. Education is held to be life experience rather than mere memorization, and the school is being transformed from a place where the child is prepared for life by learning certain conventional facts and ideas to one where he may come into real touch with life. He is to be no longer held to conning textbooks and lessons, but to be stimulated to propose problems and to be guided in solving them. Instead of drill studies he is occupied with activities involving expression. The whole emphasis of the school is thus shifting from the subject-matter to the child, and the teacher is being changed from a martinet and drillmaster to a friend and guide.

More patent even than this change of attitude is the change that has taken place in the imagery and terminology of education. Educational discussions in the United States are now using such terms as "variation," "selection," and "adaptation," and such conceptions are coming to dominate educational thinking. Textbooks upon educational psychology, principles of education, and methods of teaching constantly employ evolutionary language, and a host of educational writers — Dewey, Butler, Horne, Hall, Bolton, Bagley, Cattell, Cour-

sault, Bode, and Kilpatrick — are familiarizing progressive teachers with the vocabulary of evolution. Thus education is generally imaged by present-day leaders as a developmental process, modifying the individual and society, and constantly producing new adjustments. It is regarded as an unfolding of potentialities, and not as a matter of addition and accumulation, and the function of the school is held to be the providing of proper stimuli to produce such unfoldment.

#### ENLARGING CONCEPTIONS OF EDUCATION

Such are a few of the chief tendencies and advances that are being made in American education today. There is a great variety of other educational movements, too numerous even to be mentioned. In the organization and administration of American public schools there is a decided tendency toward centralization in educational activities, corresponding to the centralization in industrial and political affairs. There are also such matters as the new procedure in school hygiene, arising from the modern attitude toward the prevention of disease; new health regulations, as a result of having so many children housed in the same buildings; medical inspection and health education, new tendencies in school architecture, educational guidance, more extensive training of teachers, a rapid recognition of education as a profession, and the organization of various types of teachers' associations.

Similar tendencies to secure economy, guard health, and cause education to serve democratic ideals are continually arising in the United States. Educational theory and practice are in constant flux, and attempts at progress in education are unceasing. Every year accepted practice is being more or less worked over and

reconstructed. New activities and functions of education are being sought and developed, and nothing is held so sacred in administration, method, or content as not to be open for re-examination and forced to justify itself anew. American education has entered upon a distinctive epoch of experimentation and change. While such a situation is not without its perils, and each new proposal should be carefully scrutinized before acceptance, the present tendencies are in the main a sign of progress and life.

### SUMMARY OF THE CHAPTER

In the effort to enlarge and enrich the system of democratic education that had taken shape in the United States by the close of the nineteenth century, we have constantly tried to introduce changes and improvements. We have endeavored to extend public education to all sorts and classes of people, and to give every individual and group a chance to make the most of natural endowment and legitimate effort.

Hence have arisen new types and units of organization, such as vocational training, continuation schools, adult education, and schools for the physically, mentally, or morally handicapped, differentiated high school courses, junior high schools, junior colleges, and nursery schools.

Likewise classification and adaptation of courses to the interests and needs of all the children have been greatly improved through such reorganization as the Santa Barbara, Batavia, Newton, Gary, Dalton, and Winnetka plans, through reorganizing the material of the curriculum, and through developmental methods of teaching like the socialized recitation, problem method, project lesson, and Montessorian didactic apparatus.

More fundamental have been the contributions made to educational theory and practice by Dewey's experimental school and the progressive schools stimulated by it. Another most significant movement has been the application of statistical methods to the problems of education started by Thorndike, and the effort to measure educational achieve-

ment and intelligence itself through scales and tests. Finally, even more far-reaching has been the influence upon education exerted by the developmental concepts, the imagery, and the terminology of organic evolution.

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